Florida WILDLIFE

Threatened Species
Man Versus Birds

Fishing · Hunting
· Conservation ·
Outdoor Recreation

MAY 1974

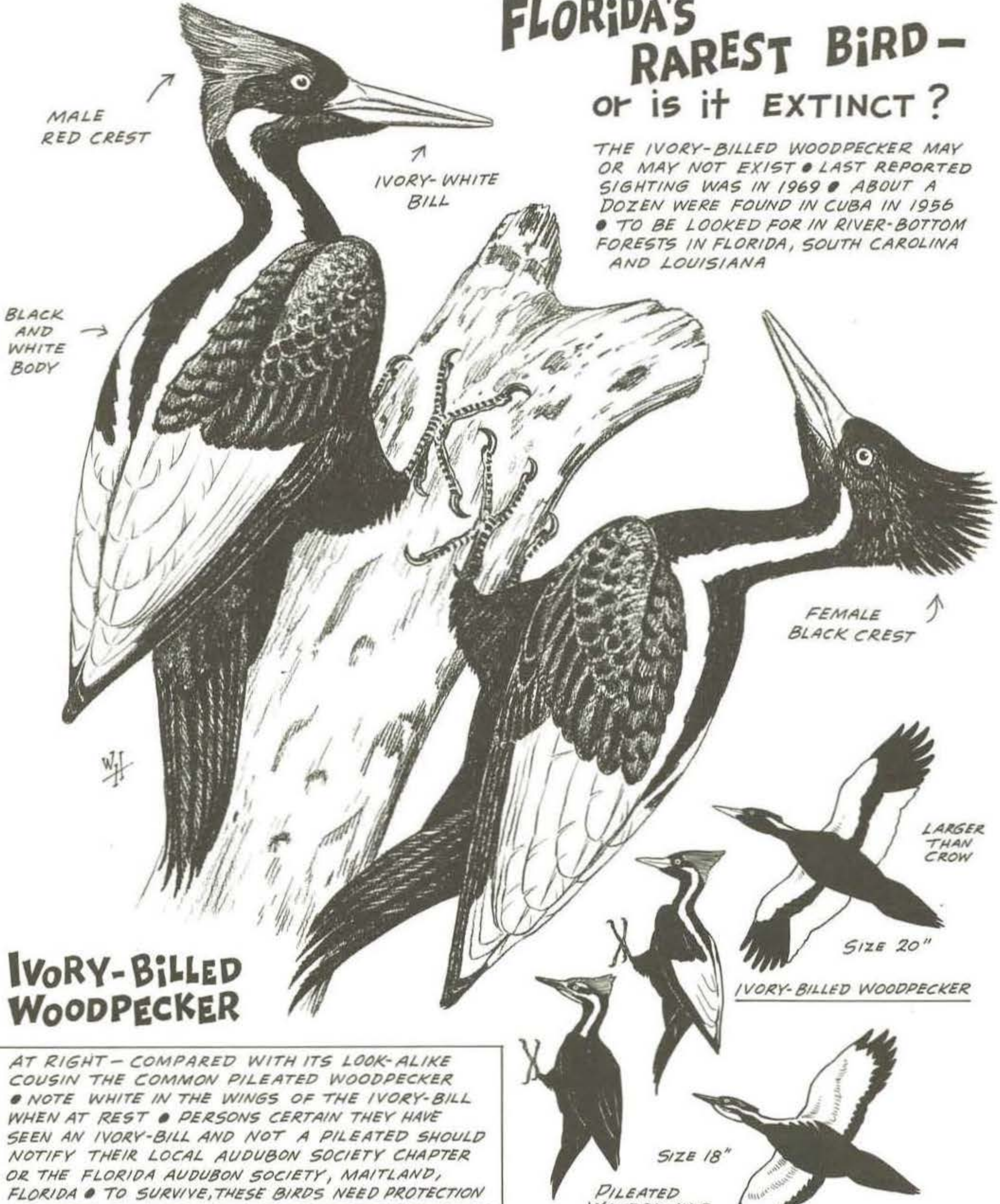
The Florida Magazine for all Sportsmen

35 CENTS

Florida Wildlife Scrapbook

FLORIDA'S RAREST BIRD — or is it EXTINCT?

THE IVORY-BILLED WOODPECKER MAY OR MAY NOT EXIST • LAST REPORTED SIGHTING WAS IN 1969 • ABOUT A DOZEN WERE FOUND IN CUBA IN 1956 • TO BE LOOKED FOR IN RIVER-BOTTOM FORESTS IN FLORIDA, SOUTH CAROLINA AND LOUISIANA



IVORY-BILLED WOODPECKER

AT RIGHT — COMPARED WITH ITS LOOK-ALIKE COUSIN THE COMMON PILEATED WOODPECKER • NOTE WHITE IN THE WINGS OF THE IVORY-BILL WHEN AT REST • PERSONS CERTAIN THEY HAVE SEEN AN IVORY-BILL AND NOT A PILEATED SHOULD NOTIFY THEIR LOCAL AUDUBON SOCIETY CHAPTER OR THE FLORIDA AUDUBON SOCIETY, MAITLAND, FLORIDA • TO SURVIVE, THESE BIRDS NEED PROTECTION FROM THE GUN, AND MANAGED FOREST SANCTUARIES

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Florida WILDLIFE

VOL. 27, NO. 12

MAY 1974

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Whitetail fawns are adorable, it's true, but they are alert wild animals accustomed to fending for themselves—not storybook pets in need of love and protection from the elements. See page 23.

From A Painting By Wallace Hughes

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FLORIDA DEPT NATURAL RESOURCES

Photo By Carson Baldwin, Jr.

finding an acceptable solution to the problem of predation on hatchery fish by birds is a must

Man vs. Birds

By MORRIE NAGGIAR

ONCE NOT TOO LONG AGO, when a fish pond owner suddenly became aware of the fact that his favorite bream and bass puddle was serving as a lunch counter for a convention of egrets, herons, or other pond birds, the solution was as close as his trusty old 12-bore. As long as no one complained too much, and the authorities continued to look the other way when the pond scoggin feathers started to fly, it appeared to be a good way to handle the situation.

Then, all of a sudden, it seemed, people began to take a second look at a lot of things that had been taken for granted in their surroundings. The pond birds started to assume their rightful role as an important segment of the picture. No longer merely varmints to destroy whenever opportunity offered, the pond birds came more and more to be appreciated as a decorative, enlivening part of the natural scene, in addition to occupying an important niche in the scheme of things.

Of course, there are still some die-hards around who figure any bird wading about in pond or marsh just has to be devastating the game fish population and should be eliminated. At the other extreme are those who couldn't care less if the birds eat every bass, bream, and frog in the state as long as there are enough birds to brighten up the marshes and lake shores. Fortunately, most of us come somewhere between the two extremes.

There is one complication that has intruded into the matter, however. During recent years, a substantial tropical fish farming industry has sprung up in the state. With dozens of small, relatively shallow ponds, many of them at a distance from buildings and the bustle of human activity which might otherwise offer some protection, the fish farms have sometimes become foraging grounds for various species of wading birds. With tropical fish having a wholesale value of from a few cents to a dollar or more each, serious attention by a few great blue herons, American egrets, or other efficient avian fishermen can carry a pretty potent economic wallop. Small wonder, then, that there is some contention between the fish farmers and the bird watchers, sometimes with bad feelings on both sides of the fence.

Some months ago, in an effort directed toward finding some practical solution to the problem, the

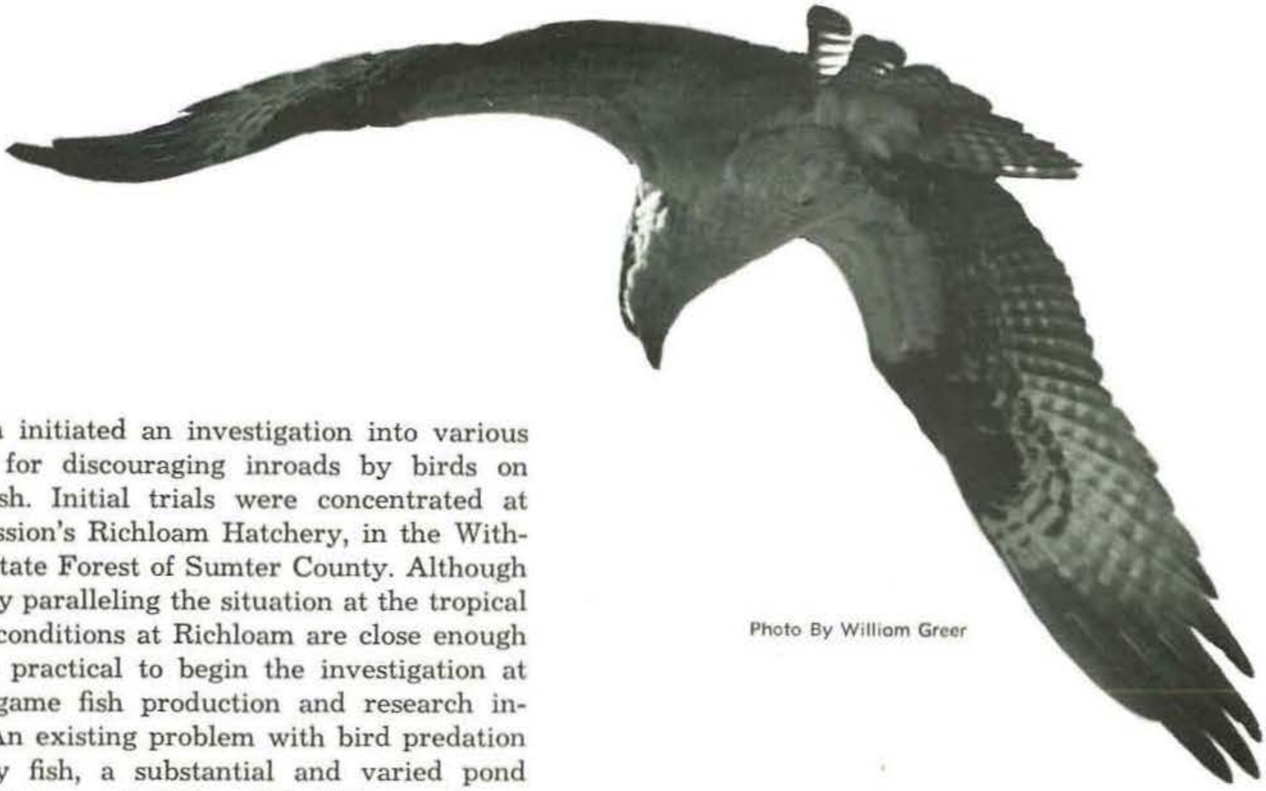

Photo By William Greer

Commission initiated an investigation into various techniques for discouraging inroads by birds on hatchery fish. Initial trials were concentrated at the Commission's Richloam Hatchery, in the Withlacoochee State Forest of Sumter County. Although not precisely paralleling the situation at the tropical fish farms, conditions at Richloam are close enough that it was practical to begin the investigation at this large game fish production and research installation. An existing problem with bird predation on hatchery fish, a substantial and varied pond bird population, availability of facilities and personnel, and the opportunity to carry out the basic investigations with a minimum of expense made Richloam a logical choice.

The U.S. Fish and Wildlife Service, through the Gainesville office of Dave Peterson, state supervisor of wildlife services, was most helpful in providing equipment, materials, and advice.

Early in the study it became apparent that only certain species of wading and diving birds exert sufficient pressure on game fish handled at Richloam to merit serious attention. These include the great blue heron, anhinga, cormorant, osprey, and, to a lesser extent, the little blue and the night herons. The other wading and diving birds common to the area, including wood ibis, white ibis, cattle egret, snowy egret, Louisiana heron, pied-bill grebe, kingfisher, and green heron are of little concern except when ponds that have been drawn down are, for one reason or another, left unguarded for some period of time.

One facet of an investigation on a relatively limited area is that sufficient time must be allowed between the testing of some types of device to let the birds settle down after each trial. For example,

(Continued on next page)

An efficient fisherman, the great blue heron, left, can be troublesome to a fish farmer. Osprey, or fish hawk, above right, is attracted to hatchery ponds, but can be prevented quite easily from inflicting severe damage to the crop.

Photo By A. D. Aldrich

(Continued from preceding page)

following use of the carbide exploder "cannon," pond birds were noticeably jittery for some time. A test of another device immediately following the cannon conceivably would not yield a typical response since the birds would already be on edge from their exposure to the cannon noise.

Normal movements of the birds is also another factor that must be considered. The pond bird population varies greatly with the season. It also fluctuates with availability of food in other areas. Heavy rains, for example, result in flooded pasture lands which lure birds away from the hatchery so that the local bird population may be drastically reduced until conditions again change.

A number of devices and techniques for protecting fish have been tested at Richloam. Those thus far evaluated include use of foil flashing devices, lines strung horizontally over ponds at various heights, emergency light flashers, scarecrows, single-strand electric fence, floating protective shelter, two types of exploding projectiles, carbide cannon, two types of time-fuse fire works, and plastic netting screen.

A few words on efforts with each of these devices will indicate the extent of the trials that have been conducted.

Horizontal lines—Lines suspended horizontally over the ponds at heights varying from 2 to 7 feet were unsuccessful in keeping birds from foraging. When their usual flight pattern is interfered with, the birds simply land outside the pond area and walk in. Tropical fish farmers in the coastal area, where predation by gulls is a problem, have reported that the technique is useful there.

Foil flashers—Commercially-produced heavy metallic foil discs suspended on lines stretched across the ponds were very effective in preventing predation by ospreys on largemouth bass and striped bass brood fish. They also kept great blue herons and other wading birds away from the immediate vicinity of the brood ponds. Difficulty was experienced in preventing the discs from tearing off the lines during strong winds.

Flashing lights—Tested on several different nights, flashing "emergency" lights, coupled with appropriately placed Scotch-lite reflectors, were effective in keeping night herons and the occasional night foraging great blue heron off the ponds. Even during the early hours of daylight the light appeared to be effective in keeping birds from making inroads on fish rendered vulnerable by pond drawdown. The flashing light is effective for short-term occasional use; it would very likely lose its value if left in one position over an extended period.

Scarecrow—It was thought possible that a common garden-variety scarecrow, coupled with shooting over the birds at intervals, might be effective in keeping wading birds off the ponds. On the initial attempt, birds stayed away for about 2 hours, but they soon became accustomed to the scarecrow, and it became completely ineffective as a pond guard.

Electric fence—A single strand electric fence rimming the pond and a few inches above the water showed some promise of providing lasting pond protection. There was some small mortality of birds connected with use of this device. Changing the on-off pulse cycle to give a longer off period might help eliminate the problem. Since zero mortality is a strict requirement of any acceptable bird control device, the electric fence may be out of the running despite its initial promise.

Floating shelter—A floating shelter consisting of a plastic foam block with 2-inch mesh wire suspended from it appears to interfere with foraging of diving birds such as cormorants. The device seemed to be effective in reducing predation by anhingas and cormorants in a largemouth fingerling rearing pond.

Exploding projectiles—Two types have been tested. A short-range projectile which is fired from a blank cartridge pistol and tumbles end over end to explode with considerable force was used on bird concentrations. It drove birds off the ponds effectively, but when foraging conditions were good, the birds came back again within a few minutes, almost always led by little blue herons, which were more aggressive in their foraging than the other pond birds encountered during this study.

In general, the same remarks apply to Teleshot shells fired from a 12 gauge shotgun, although their superior range makes them more useful in the type of work under consideration. Initially, Teleshot shells, which have a range of about 150 yards, appeared to be effective against ospreys which were regularly working brood largemouth and white bass holding ponds. After a number of incidents, however, the birds would merely move off to a distant pond and resume their foraging activities. The shells are useful to some degree in keeping wading birds away from fish concentrations exposed by pond drawdown.

Time-fuse fireworks—These were very effective in keeping concentrations of birds away from fish made vulnerable by pond drawdown. Fuse rope burns at a variable rate, depending upon atmospheric conditions, but experience allows setting off fireworks at effective intervals. The large bulldog salutes and cherry bombs which are most effective in this application are now cut off by federal regulation, although an effort is being made to clear limited manufacture of them for controlled use in agriculture. A substitute which is available is a fuse rope rigged with packages of small firecrackers instead of the salutes. Although not as dependable as the salutes, they do a reasonably good job of keeping the birds off fish concentrations.

Carbide cannon—A carbide exploder was very effective in repelling birds from a favored loafing and foraging area for a period of 2 days. The noise factor is a consideration, however. One party living a mile and a half from the hatchery, and through heavy timber which should have deadened the sound, came to see what all the noise was about. Obviously, in a heavily settled area—and many tropical fish farms are so situated—the noise would preclude use of the cannon. There was a report of one operator being hailed into court on a "noise pollution" charge stemming from his use of an exploder to repel birds.

The anhinga, or water turkey, above left, is an expert diver and fisherman. American egret, above right, takes a variety of animal life, but is of little concern as a fish predator at Richloam. Little blue heron, below, is an aggressive forager—takes variety of food when able.

Photos By Wallace Hughes

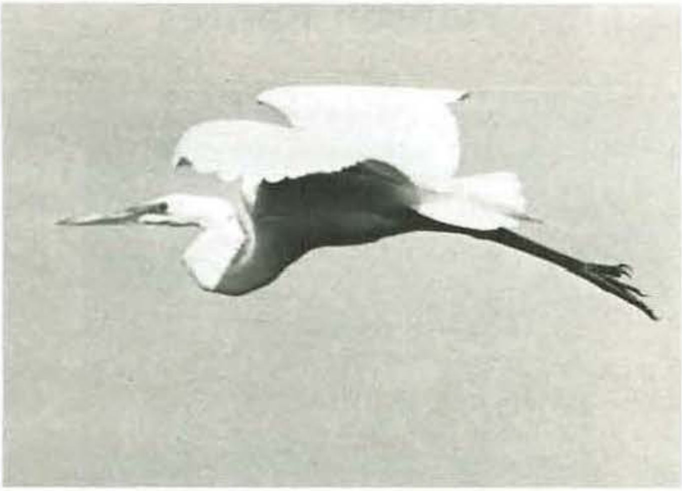

Photo By Lovett Williams

Screening—Although a limited amount of screening has been done thus far, tests made on relatively small areas indicate this technique may be the best answer to the bird problem. The matter of cost of materials and labor to install, plus the interference with normal fish cultural activities which require ready access to the ponds, must be taken into consideration. The current availability of lightweight plastic netting suggests a number of methods of screening that would require a minimal support structure or framework. This is certainly an area that should be checked into more thoroughly.

Pond depth—Deep water appears to offer a good natural protection for game fish from most pond birds. Those ponds at Richloam without shallow margins appear less attractive to foraging birds. It has been noted, however, that some species of tropical fish habitually stay close to the surface, which increases their vulnerability. Edge screening may offer a partial solution to this problem.

This summarizes the bird predation control efforts thus far. The final solution is certainly not yet at hand, but efforts are being made to work out reasonable methods that would be applicable to tropical fish farms as well as at state game fish hatcheries.

One thing is clear, however: The day is past when the killing of pond birds, if not condoned, was at least ignored by the officials. The law and the Commission's responsibility are clear on the matter. Both federal and state regulations extend protection to most birds, including all of the egrets, herons, and the other pond birds. It is the intention of the Commission to enforce to the letter the law guarding these birds. It is vital to the welfare of both this valued segment of our wildlife resources and the thriving tropical fish industry that alternate means be developed soon to solve the conflict between man and birds. ●

Hansen Retires

BILL HANSEN

Times change, scenes once familiar are altered, and faces tied by long association to certain locales are replaced by others. And so it is around the Game and Fresh Water Fish Commission's publications section, home of Florida Wildlife. Editor William F. "Bill" Hansen has retired. It wasn't by choice. He is still far from the usual retirement age, but the insidious bugaboo of a debilitating illness forced the move.

For the past 20 years, Bill's infectious laugh, his ready wit, his ability in editorial, photographic, and administrative fields, and his willingness to work long and hard to keep Florida Wildlife going out each month with the conservation message have been a fixture around the agency's central office in Tallahassee. Although he is no longer active in publishing the magazine, Bill's influence as a long-time and highly regarded publications chief will be lasting.

GENE SMITH

The Hansens, Bill and his wife, Penny, reside at 3005 Echo Point Lane, Tallahassee 32304.

To fill the spot left open by Bill's retirement, Howard E. "Gene" Smith has moved up from the associate editor's desk. Gene has been with the Commission since 1959, when he went to work with the Fisheries Division's lake and stream survey project. In 1963 he transferred to the Information and Education Division with which he served as regional I&E officer, first at Panama City and later at Lakeland. Since 1967 he has been with Florida Wildlife and the publications section in Tallahassee.

Gene came to Florida from his native South Carolina after receiving training in his chosen field at Anderson College under a journalism scholarship. His interest in the outdoors is wide and varied, as reflected by his numerous magazine articles over the years. Gene and his wife, Carol, and their two children, Scott, 10, and Kim, 9, make their home in Tallahassee.

MORRIE NAGGIAR

Maurice "Morrie" Naggiar, Florida Wildlife staffer for a number of years during the 1950's, until returning to his native Pacific Northwest in 1958, was appointed editorial assistant. He had been superintendent with the Fisheries Division's hatchery section, living at Richloam Hatchery in Sumter County since returning to Florida in 1970.

After graduating from Oregon State University "some years ago," he held a number of positions in fish and wildlife and related fields, including several years as I&E chief with the Oregon Fish Commission, Pacific editor with Salt Water Sportsman Magazine, and a number of spots in both fisheries and game research and management. Morrie and his wife, Violet, and daughter, Annette, 11, live in Tallahassee. An older son and daughter, both married, live with their families in Oregon. ●

Piscatorial Potpourri

it's roundup time on the angling scene, and here's a grab bag of inside dope on current subjects ranging from philosophy to filleting

By CHARLES WATERMAN

While fresh water trout fishermen wax eloquent about the wonders of nature and the values of wild rivers and undisturbed brooks, bass anglers seem bent on making their sport sound as crude as possible.

Tarpon are called "silver kings," but it is stylish to call a big bass a *hog*, preferably pronounced *"hawg,"* even if you have a Ph.D. in English. Since the larger bass are females, they are colorfully termed "sow bass."

Although nobody gets more technical in his fishing methods than the modern bass chaser with his electronic fishing gear and space-age bass boat, the accent is more and more upon banging the fish's nose on the deck in a hurry, and less and less upon the method used. "Playing" a bass on lighter tackle than absolutely necessary is considered the effete activity of a pantywaist who can't even pronounce *hog* with a *w*.

Surface lures are more and more in disfavor because they usually catch fewer pounds of fish than bottom bumpers. When light lines are used it's because the fish have shown an aversion to hawsers. A fly fisherman is generally passed off as one who just doesn't understand the purpose of the game.

Frankly, it appears that the size of the catch has become the primary gauge of bass fishing fun, and I'm not alone in that opinion. In fact, I became convinced of it when I heard it from a tackle dealer.

Sporting methods are at a premium in nearly every other kind of gamefishing. There are offshore anglers who go to lighter and lighter lines, and methods that require more skill. There are fresh water trout fishermen who would as soon be caught with uncut heroin as with bait, and some of them haven't killed a fish in years.

But I must report that the theme of the Florida black bass angler is primarily to *bang them damn hawgs on the deck!* It's the same elsewhere, in the South at least.

I think the bass deserves more respect.

I find that bass anglers as a group have very little knowledge of bass habits other than those that will help them catch more fish. Bass propagation isn't a popular subject, and a real whiz-banger of a bass fisherman often has ecology ideas that went out with the stagecoach. Although literature on how to catch a bass grows by leaps and bounds, the writings about how he lives and reproduces are dwarfed by the things written about trout, even though there are many more bass fishermen than trout fishermen.

The outstanding fact seems to be that the bass fisherman is reluctant to consider any method that will handicap him. His attitude is that if he caught more fish on live shiners than on surface plugs, the case is closed and anybody who uses a surface plug just hasn't heard. Suggest that something else might be more fun than the most productive method and you'll get a blank stare. Use the word *challenge* and the blank one will turn to one of pity.

You can put it down as human nature if you want to, but I don't think it shows up anywhere as strongly as with bass fishermen.

Panfishermen using boats without live wells can do a lot worse than those wire baskets which look a little like folding fish traps. They're too

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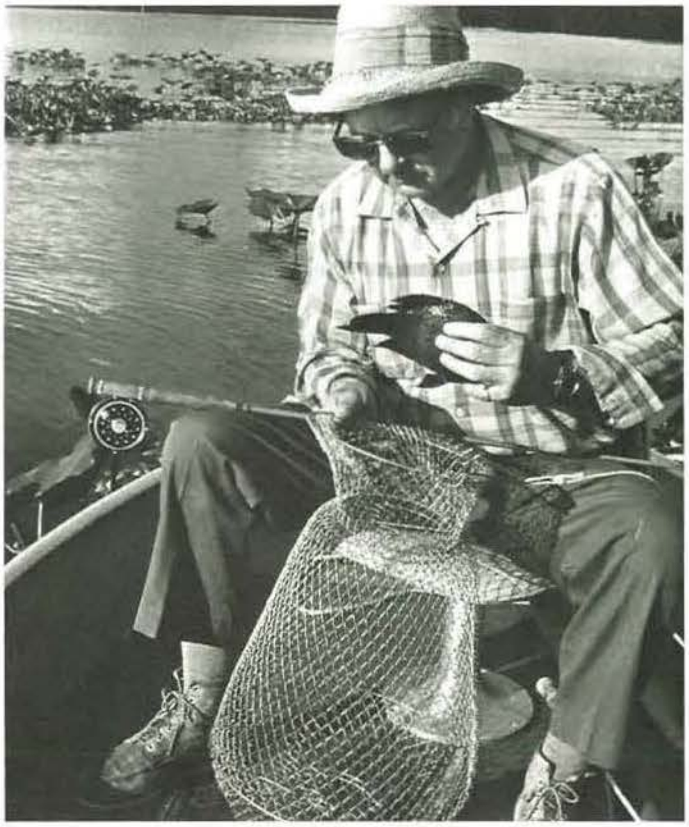
"Live basket" takes place of live well—keeps panfish fresh.



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small for some catches, but most of them will work for a 2-pound bass. The little wire doors are generally spring-loaded and have latches. You just put your fish inside and lower the thing over the side of the boat.

Use of stringers on panfish such as bluegills can be a bit cruel, especially if the string is to be moved much. A snap stringer often tears out of a bluegill's mouth. A plain cord stringer through the gills will allow one fish's gill covers to slide over the nose of the one below it. Both die slowly. The basket solves all of these problems.

It's true that a fish isn't high enough on the life scale to be as sensitive as more advanced creatures, but I'm convinced it can suffer, and many folks who are very sensitive about unkindness to higher animals unthinkingly abuse fish.

CLIP BOARDS for cleaning fish have been around for a long time. Some fish benches have big paper clips attached rigidly to the bench and others are fastened to heavy cords. Then there are the boards that you can take along in a boat and that have a clip near one end.

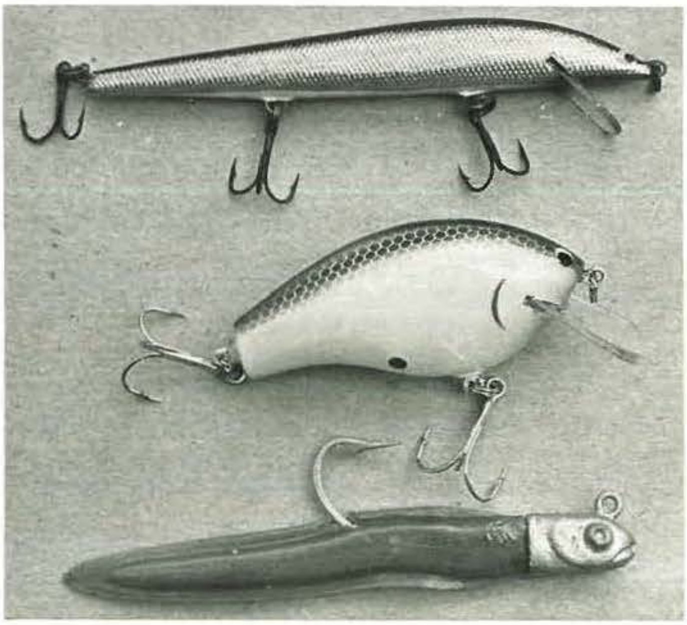
The idea is obvious. You simply clip the fish's tail to the board and it's held so you can scale or fillet. I've been using a clip board that rides in the boat and makes it possible to dress the fish without making a mess, even if you never go ashore.

Some strong taste is a result of the fish's skin. That depends on the water you're fishing, some of it being full of tastes that stay right with the fish through the skillet or broiler. It's nice to fillet most Florida fish rather than simply scaling them, but there's a lot of waste with panfish, and the traditional method is simple scaling. Then the diner separates the bones as he goes along. The clip attached to a fish's tail makes either method easy.

I know there are commercial fishermen, and some sports anglers, who can do the job with a few swipes of a sharp knife and wouldn't bother with a clip. But those with less practice will invariably find a clip helpful, especially with small and slippery subjects.

You can also use a clip for aid in skinning a fillet after it's removed, but it doesn't help me much there. I put the knife down against the skin near the tail, with the skin side down, and pull on the inch or so of skin and little dab of meat left on the tail side of the knife. As the blade slides along against the inside of the skin, I pull on the skin, working it back and forth as I pull. The blade goes better that way.

NOW AND THEN there are types of fishing lures that can very nearly be called revolutionary. Of course, there's an original model that's heavily imitated, but since patents are hard to get for fishing baits there's nothing unethical about doing something similar, possibly making improvements along the way.



Representatives of three "revolutionary" types of lures. Shown from top to bottom: Rapala, Big B, and Bait Tail.

In recent years, there have been three new ones that have not only caught the fishermen but have caught a lot of fish. There was the Rapala from Sweden, a new design in balsa wood with a plastic lip. It has been nearly duplicated by American manufacturers, and it's been done in both balsa and plastic. For some purposes, the more rugged plastic has been better. For other fishing, the balsa has evidently produced action that's more desirable.

Then there's the jig with a flexible tail of plastic material much like the stuff of which plastic worms are made. This hasn't replaced hair, nylon, or maribou as jig dressing but it's greatly preferred by many fishermen for their particular needs. One of the earliest of this type was the Bait Tail. Now there are many makes that are similar.

The Big O type was originated as a balsa shad imitation, rather difficult to make and highly effective, especially on some of the impoundments. There are several similar lures made from both plastic and balsa. The Jim Bagley people make one of balsa that goes as the Big B. They're expensive, costing about $5 in the balsa construction. There's a lot of handwork in balsa lures, and the price isn't excessive at all when you consider that.

FISHHOOK SIZE is a part of tackle balance, a part that's often ignored but effectively demonstrated by Ed Miller, of Tallahassee. Miller, who does the thing at a fishing school sponsored by the St. Marks Yacht Club, takes a light spinning rod and a big saltwater hook which he has an assistant hold so that the point is in contact with an orange. Miller then shows that he can't set the hook through the orange skin, his efforts being stymied by rod bend and line stretch. Next, he takes a small hook and flips it in easily.

If you must use big hooks on ultralight tackle, be sure they're sharp. Many fish are tougher than oranges. Prime examples of big hooks on light gear are big saltwater fly-rod streamers with hooks that must be set with a soft tip. The real experts take great pains with such weapons, often employing a triangular barb form that slices a little as well as punching when the power is applied.

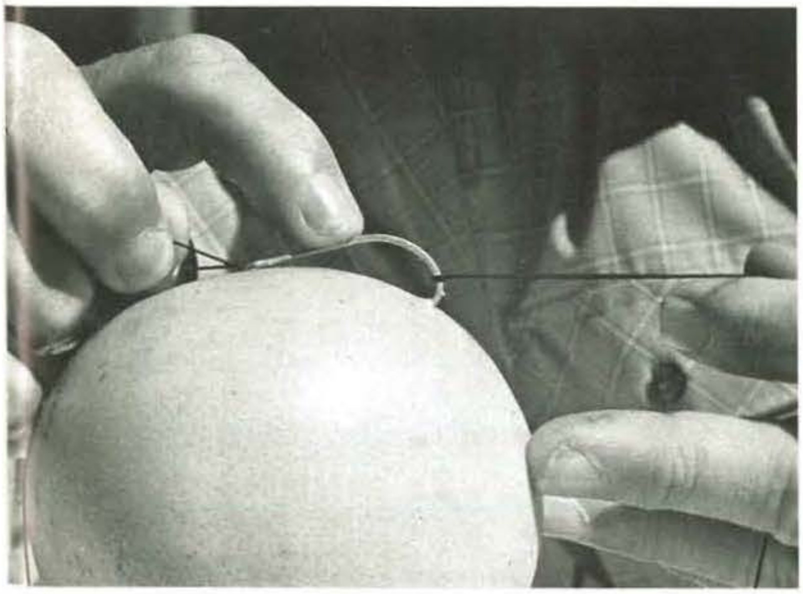
Bait fishermen often need considerable authority for hook setting, and few shiner anglers use rods with enough backbone to handle slack and line stretch before getting to the fish. They are saved to some extent by the fact that most good quality bait hooks and plastic worm hooks are pretty sharp to begin with.

The single hooks mounted on bass spoons and spinner baits are likely to be pretty dull. An ignition file and a small hone will handle your problem. Remember that light wire goes in more easily than heavy wire but is easier to pull loose because it has more tendency to enlarge its entry hole.

REMOVAL OF A HOOK that's been stuck in past the barb (into people instead of fish) can be a little grisly, but there are efficient shortcuts. If it's a shallow penetration, the best way is to shove it on through and snip off the barb with pliers.

If it's a really deep bite, there may still be salvation short of gory surgery. A good trick that I've seen demonstrated with a single hook includes wrapping a piece of line around the hook at the bend, thus giving a straight pull out. By exerting gentle pressure downward with your fingers, the barb can be loosened and withdrawn without additional damage. It would seem that the same thing could be done by hand without the line to pull with, but evidently it's harder to get a straight pull outward that way. The hook bend can be deceptive whereas the line around the bend finds the right pull automatically. I hope you don't get much practice.

Demonstrating removal of fishhook with line wrapped around bend. Line is pulled to right while a finger presses hook gently. Hook is stuck in a grapefruit.



THERE'S AN OLD RULE that you shouldn't stand up in a boat, and of course it becomes silly when the boat is longer than 10 or 12 feet and reasonably wide. It comes down to the circumstances.

I recently read an angry letter written by a conscientious parent who had seen a picture of a fisherman standing up in a canoe. How, the parent wanted to know, could children be taught canoeing safety when a national magazine was showing fools standing up in canoes?

I hope pictures of people standing in canoes don't undermine any safety instruction, but there are times and places when standing in a canoe is not only routine but necessary for the work at hand.

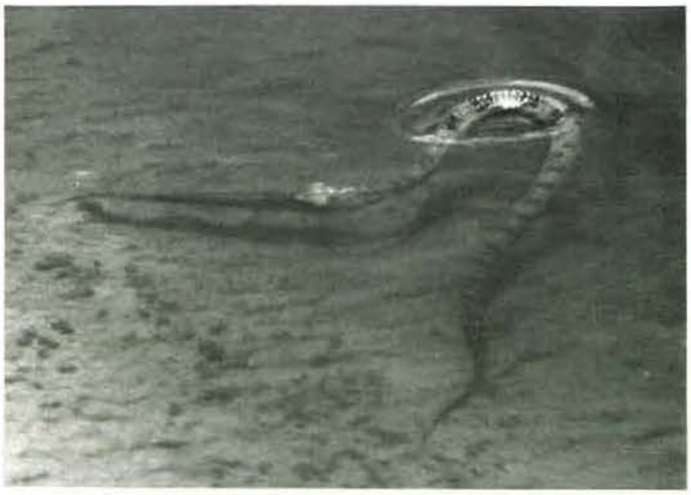
In some swift, shallow rivers of the North, the pushpole is a standard canoe propulsion method. A good poler can go up incredibly fast streams, and he stands up to do his job. Where possible he goes up the shallow edge, and where rocks break the current he slips up on the quiet side. Of course, it's like riding a bicycle. He's had enough experience that he's much different from a passenger who might be little more than dead weight.

There are people who become remarkably catlike on all sorts of boats. A sailboat expert acquires remarkable aplomb on a pitching deck, and those who spend much time on large ships have similar skills.

Now the canoe and small boat business is a little different from keeping your footing on a large craft. Since I'm a stumbler and a grabber on a 40-footer and seem to be able to walk around a small skiff pretty safely, I tried to analyze the difference. It was simple when it dawned.

As I walk about the smaller craft, it tips with my weight, even if only slightly, and my weight has a bearing on what happens to it. On the bigger boat, it's no longer like riding a bicycle. The thing is going to take the same roll or pitch no matter what I do. It's a somewhat different kind of balance.

SOME EXPERT FISHERMEN using open-faced spinning reels prefer to remove the bail and do the picking up with their fingers, aided only by small hooks or rollers. This takes a little practice, and if you want to do away with the bail, don't give up with your initial failures. Not many manual reels are made today. Although bails and their rather touchy mechanisms do cause a lot of trouble, they're better made than they used to be. ●



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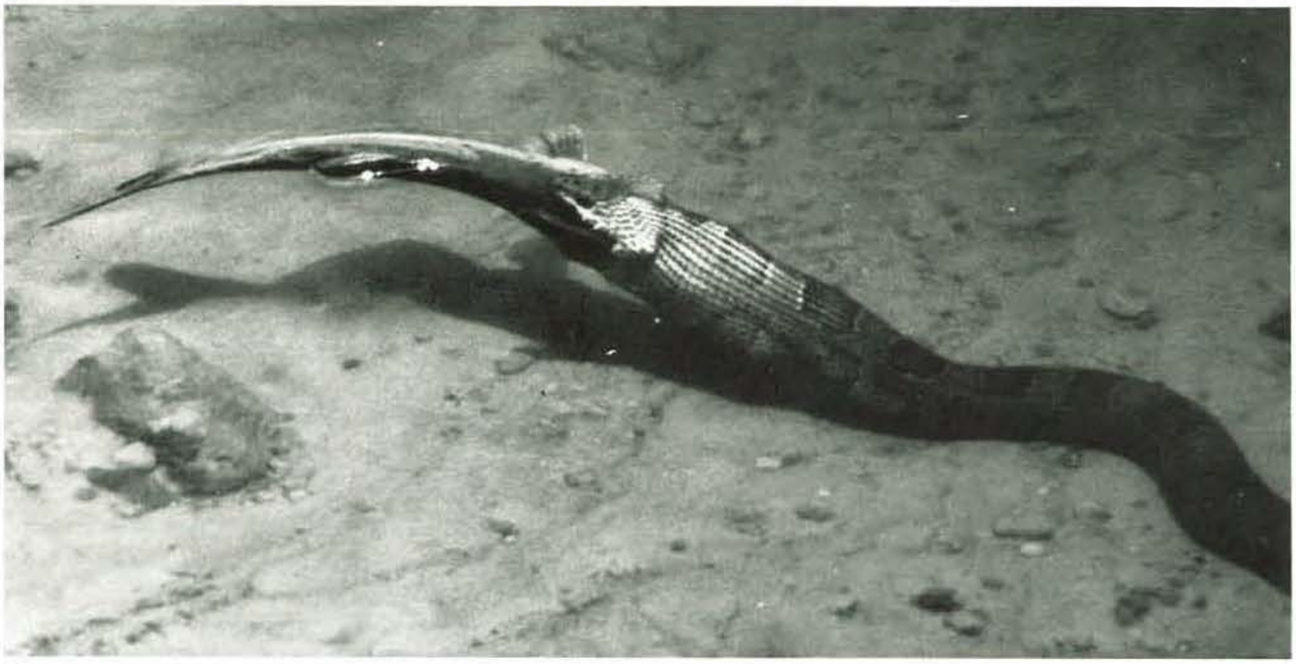
Life Goes On



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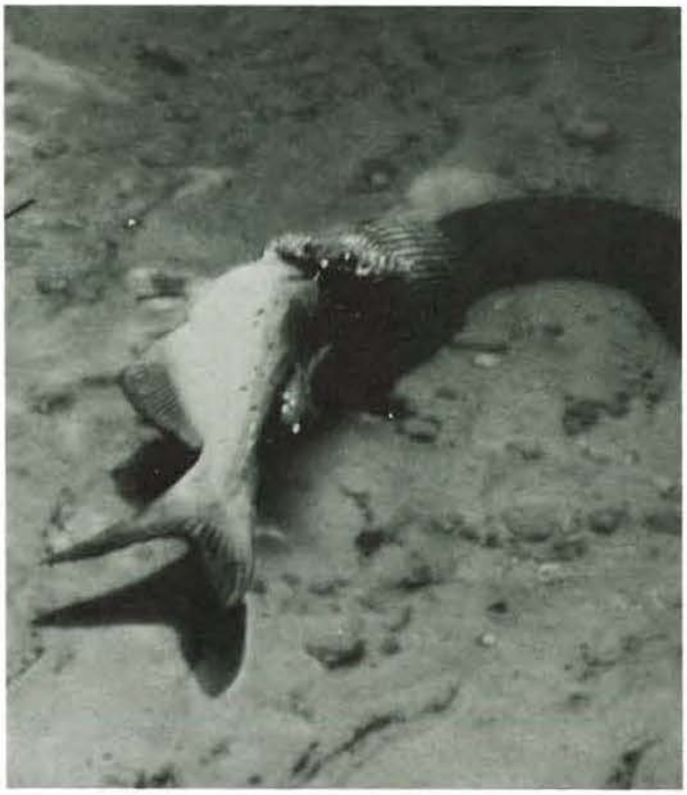

IN THE BROWNISH WATERS of Nassau County's Lofton Creek, near Florida's northeast coast, another step in nature's food chain begins as predator and prey meet (1). Moving toward shore and firmer "footing," a 4-foot brown water snake maintains a death grip on his still-struggling victim, a large channel catfish.

His tail hooked around a rock in water that is only a few inches deep, the snake's jaws stretch widely (2) and the slow process of swallowing the now-listless fish begins. Paying little attention to the photographer, the snake gradually works his way up the increasing girth of the catfish in what would appear to be an impossible feat of engorgement.

Initially, the process is a slow one, as the snake's jaws and backward-slanting teeth work their way forward. Powerful body muscles force the victim inexorably onward, down the long passage (3).

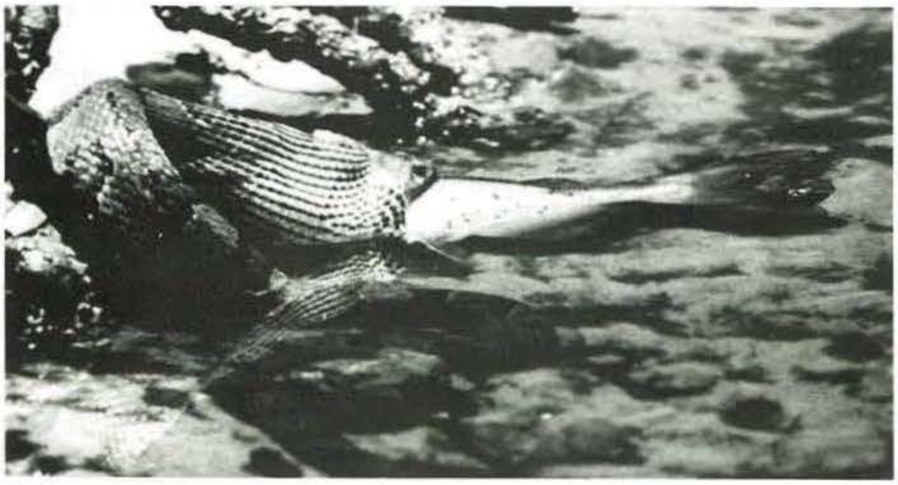

PHOTO STORY

By

CHARLES PRICE

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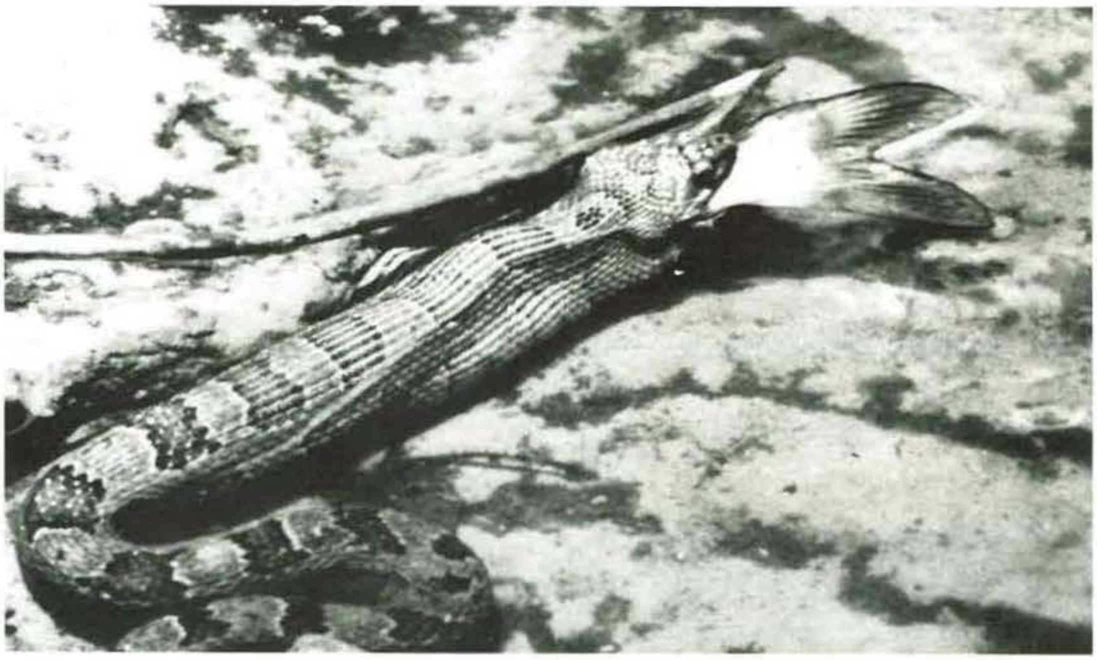

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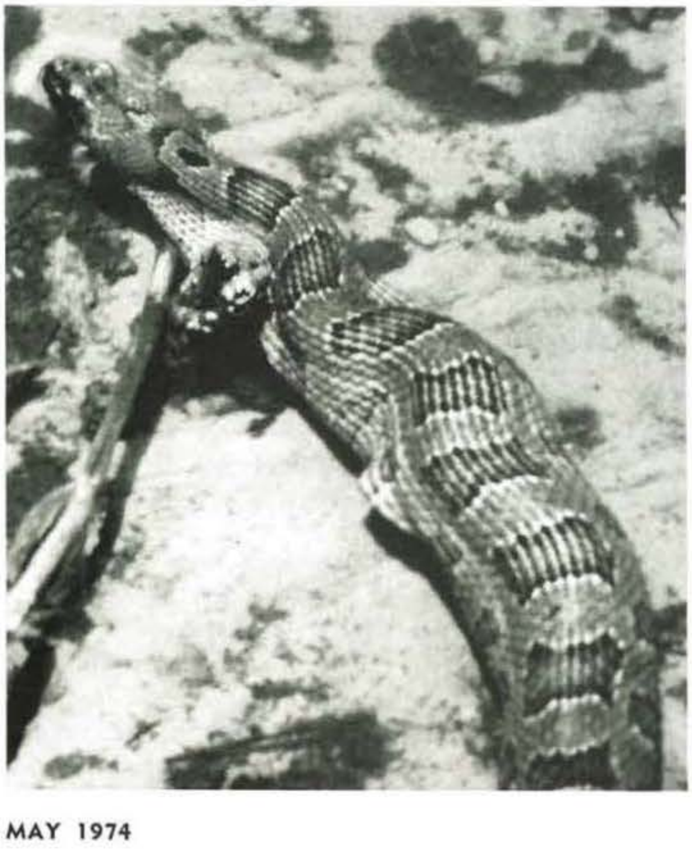

Reaching the thickest part of the fish's body, the snake is faced with the additional problem of the needle-sharp dorsal spine, familiar to anyone who has ever imbedded one in foot or hand. Forcing the barb to fold in and lie flat, the ever-advancing jaws continue past the point of no return (4). If frightened or molested now, the snake would have difficulty disgorging its catch.

The difficult part over (5), the meal continues at a more rapid pace, with only the fish's tail remaining exposed.

At the end of the 15-minute process, a telltale bulge in the left side of the snake's now fatter body (6) is the only remaining evidence that the victim was a catfish. The snake remained resting in this position for several minutes before slowly moving off to deeper water. ●

trying to put a monetary value on a day on lake or river is no easy matter

What's It Worth?

Photo By Art Runnels

As any angler with good sense will vouch, it would be next to impossible to put an accurate value on a string of fish. I suppose you could figure it one way by saying if you didn't have a mess of bream to build your meal around, you'd go out and buy a package of hamburger, or pork chops, or chicken, or some such. Therefore, using that kind of thinking, your bream would be worth a buck or so a pound.

To an economist, that might possibly make good sense, but any avid hook dunker knows there is a good bit more to it than just the meat you put in the pan. Consider it from the angle of what you would take in terms of cold cash *not* to go fishing. Quite a few Waltonians of my acquaintance could retire on the proceeds of such a plan if the payments were anything like equitable—provided you could get them to give up fishing in the first place, which isn't too likely no matter what the price.

But, impractical though it may be, with times being what they are, fisheries workers have been pushed into putting a dollars and cents value per fish on various species. One good reason for hanging a price tag on largemouth bass, bluegills, and the like, which you can't legally buy on the market, is to give some way of measuring the loss resulting from fish kills. Putting it in terms of dollars is getting it down to language most of us readily grasp. It can also provide a powerful lever in taking to task some abusers of the environment in the way they feel most—through the pocketbook.

Also, a price tag is a handy thing to have to display before damage to a valued fish population occurs. As an example—and we didn't altogether draw one out of thin air—if some environmental abuse in the guise of progress or whatever should drastically cut the Suwannee River sport fishery, how much loss would it be to the public in terms of dollars?

In this instance, Gray Bass, of Lake City, biologist in charge of the Suwannee River investigations project, can give a pretty good answer. Among other things, Bass and his crew have been checking into the details of the sport fishery on the Suwannee and its main tributary, the Santa Fe, for several years now. According to his calculations, the Suwannee's sport fishery is worth a good $471,000 a year, and the Santa Fe has a sport fishery that is worth another $185,000 annually.

These sums represent the value of the fish caught plus the amount of money spent by the fishermen in pursuit of their sport. They allow absolutely nothing for the real, down-to-earth value we call sport, fun, recreation, or, if you will, the aesthetics of fishing; the basic, soul-satisfying part of a day on the lake or river. Nor do the figures allow for the dollar value of the game fish remaining uncaught in the river, or the value of nongame forage species.

Without going into all the details, a word on the how of putting a dollar value on a sport fishery may be of interest to those with a practical turn of mind.

For a year, Bass and his colleague, Vinard Hitt, conducted a creel census on a 63-mile-long segment of the Suwannee and a 15-mile stretch of the lower Santa Fe. They made counts of the number of fishermen on the river, and gathered details on their activities.

A 1970 federal Bureau of Sport Fisheries and Wildlife survey indicated that each fisherman spends an average of $6.30 on each jaunt for all the various items required to equip himself, get to the river, fish, and return home. This value was used in the Suwannee calculations. Total fishing effort on the segment of the Suwannee surveyed was figured at 65,970 man-hours during 1970-71. This was equal to 18,848 trips of 3½ hours each, and an investment of $118,742. On the portion of the Santa Fe River surveyed, fishermen put in 28,622 man-hours of effort in 8,177 trips, and spent a calculated $51,515.

Expanding the data to derive approximate values for the fisheries of the entire Suwannee and the lower section of the Santa Fe takes into consideration different rates of fishing pressure and the differences in the fish populations on reaches of the two streams outside the areas studied.

In order to expand the Suwannee data, the river was divided into three sections: the creel census area—63 miles of the lower central river; the lower Suwannee below the survey area—30 miles; and the upper Suwannee above the census section—115 miles. From the central portion of the river, the fish population increases in abundance downstream and decreases upstream.

Considering the information at hand, it appears reasonable to assume that the sport catch from the shorter lower Suwannee segment is at least one-half the catch in the creel census area, and the fishery of the upper river is at least one-half the catch in the creel census section. On this basis, a total value of the Suwannee sport fishery was

(Continued on next page)

By MORRIS SHAW

Photo By Gene Smith

The smile, at left, says this lucky angler wouldn't take a hatful of money not to go fishing. A few bucks worth of fish is seen at right, but who knows how much pleasure is represented by this fine looking catch?

Photo By Lawrence Rossignol

The Suwannee bass is a rare species. Replacement cost would be many times greater than for widely distributed and more readily available largemouth.

(Continued from preceding page)

calculated to be $471,254 for the year (amount of money spent by the fishermen plus the dollar value of the fish taken).

The Santa Fe creel census area covered 15 miles of a total distance of 30 miles available for fishing in the lower section of the river. The fishery of the remaining area is probably equal to that of the surveyed section, thus, a total value of $185,336 was put on the lower Santa Fe River sport fishery.

In concluding his recent report on the value of this fishery, Bass pointed out some other pertinent facts, including the following:

The calculations do not include commercial fishery values (mullet, sturgeon, turtles, catfish, and others), or the value of the marine sport fishery at the mouth of the Suwannee.

Some species should have values different from those assigned. For instance, the Suwannee bass, *Micropterus notius*, is a rare species. Its replacement would undoubtedly be more expensive than replacement of the more common largemouth bass.

Certain species have not been given legislated values. The spotted bullhead, *Ictalurus serracanthus*, is one of these.

Efforts should be undertaken to have the monetary value of fish revised to represent more accurately the values of rare species and to include all species of fish. A more appropriate device for estimation of fish values might be the potential market values of the fish as well as replacement costs of each species.

Finally, it must be borne in mind that the dollar values given here represent only the calculated economic value of the fish themselves. If assessment is being made of the loss resulting, for example, from a chemical spill, there are other factors to be considered in addition to the fish that were bellied-up. There are also the highly important matters of damage to the habitat and the loss of the other organisms that comprise the vital links in the food chain.

It must be remembered, too, that calculated values of fish lost during a "kill" represent only the potential loss for one year. Re-establishment of a depleted or wiped out fishery can be a long-term, expensive proposition. To belt an old saw a few more whacks, an ounce of prevention is worth many a pound of none-too-certain cure.

The following is a table of values for freshwater fish killed by pollution. It is adapted from Fish Values, a booklet prepared by the Florida Department of Air and Water Pollution Control, and from Section 403.141(3), Florida Statutes:

Common Name	Size	Value
Bait fish	all	$ .03 per fish
Bass, Largemouth & Suwannee	0-6 in.	.50 per fish
	7-12 in.	1.75 per fish
	over 12 in.	2.50 per lb.
	over 8 lbs.	10.00 per lb.
Bullhead, Brown & Speckled	0-6 in.	.10 per fish
	7-12 in.	.35 per fish
	over 12 in.	.40 per lb.
Catfish, Channel	0-7 in.	.10 per fish
	8-14 in.	.50 per fish
	over 14 in.	1.00 per lb.
Crappie (Speckled Perch)	0-6 in.	.30 per fish
	7-12 in.	1.25 per fish
	over 12 in.	2.50 per lb.
	over 2 lbs.	5.00 per lb.
Bluegill (Bream)	0-5 in.	.25 per fish
	6-10 in.	1.25 per fish
	over 10 in.	3.00 per lb.
	over 1½ lbs.	5.00 per lb.
Shellcracker (Redear)	0-5 in.	.25 per fish
	5-10 in.	1.25 per fish
	over 10 in.	3.00 per lb.
	over 2 lbs.	5.00 per lb.
Stumpknocker	all	.40 per fish
Warmouth	all	.40 per fish

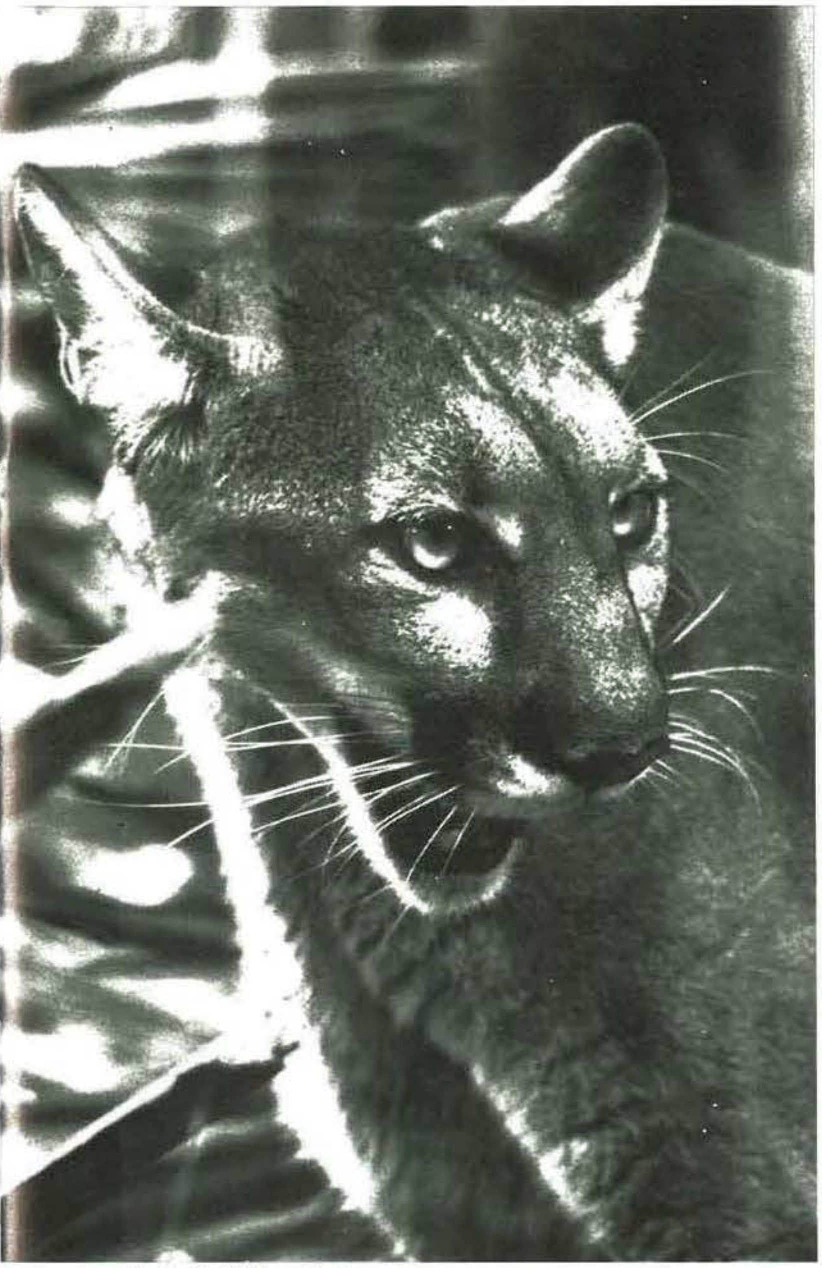

Photo By Wallace Hughes

Three of Florida's threatened species—Florida panther, above, everglade kite, below, and the Everglades mink, lower right.

Threatened Species

of Florida Wildlife

By O. E. Frye, Jr.

THE "ENDANGERED SPECIES ACT of 1973," passed by the United States Congress, represents a significant step toward a nationwide program for the protection and management of endangered wildlife by providing for cooperation between the federal and state governments through financial assistance to support state endangered species programs. This will focus more attention than before on the conservation needs of our endangered wildlife, and should lead to scientific management programs that are essential for the more vulnerable wildlife forms.

To provide for public participation in the program, the Game and Fresh Water Fish Commission, meeting on April 12, 1974, passed the following resolution on the endangered species:

> "WHEREAS, to conform with the Endangered Species Act of 1973 (Public Law 93-205), and to promote the protection, management and continued existence of all forms of Florida fish, wildlife and plants; and
>
> WHEREAS, the Florida Game and Fresh Water Fish Commission recognizes the need to establish a program to promote the protection, management and continued existence of all forms of Florida fish, wildlife and plants; and

(*Continued on page 18*)

Photo By U. S. Fish & Wildlife Service

Photo By Wallace Hughes

PRELIMINARY LIST OF THREATENED SPECIES OF FLORIDA WILDLIFE[1]

Animal Name	Status in Florida	Trend	Distribution in Florida	Known Conservation Needs
FISHES				
Okaloosa Darter (*Etheostoma okaloosae*)	Common within range	Unknown	Okaloosa County	Preservation of habitat
Shortnose Sturgeon (*Acipenser brevirostrum*)	Unknown but at least very rare	Unknown	Only one record from St. Johns River	None known
Suwannee Bass (*Micropterus notius*)	Common within range	Stable	Santa Fe, Ichetucknee, Upper Suwannee, and Ochlockonee Rivers	None known
REPTILES and AMPHIBIANS				
Alligator (*Alligator mississipiensis*)	Common—Endangered on U. S. list	Increasing	Statewide	Retention of habitat; elimination of conflict with people
Crocodile (*Crocodylus acutus*)	Rare	Stable	Florida Keys	Protection and habitat preservation
Green Turtle (*Chelonia mydas*)	Uncommon	Decreasing	Saltwater coasts	Complete protection from human disturbance
Pine Barrens Tree Frog (*Hyla andersoni*)	Recently discovered in state	Unknown	Small population in west Florida	Unknown
Indigo Snake (*Chelonia mydas*)	Common locally	Decreasing	Peninsular Florida	Restriction from commercial trade
BIRDS				
Bachman's Warbler (*Vermivora bachmanii*)	Very rare—possibly extinct	Downward	Unknown	Unknown
Bald Eagle (*Haliaeetus leucocephalus*)	Fairly common	Probably downward	Coastal areas, inland lakes, and rivers; statewide	Protection from shooting; reduction of DDT residues in its environment
Brown Pelican (*Pelecanus occidentalis*)	Common, but listed as endangered on U.S. list	Stable	Coasts of Florida	Protection of nesting colonies; reduction of DDT in its environment
Cape Sable Sparrow (*Ammospiza mirabilis*)	Very local and uncommon	Probably downward	Southern tip of Florida	Habitat preservation and habitat management
Caracara (*Caracara cheriway*)	Uncommon, restricted	Stable or declining	Prairie regions of southern Florida	Protection from shooting and accidental losses on highway; habitat preservation
Dusky Seaside Sparrow (*Ammospiza nigrescens*)	Fairly common in one localized area	Probably stable	Vicinity of Merritt Island in Brevard County	Habitat preservation and management
Everglade Kite (*Rostrhamus sociabilis plumbeus*)	Rare, probably less than 100 individuals (common in South America)	Approaching extinction	Everglades, Lake Okeechobee, and upper St. Johns River	Habitat preservation; food requirements need study; protection from shooting by duck hunters
Great White Heron (*Ardea occidentalis*)	Locally abundant (color phase of Great Blue Heron)	Stable	Nests only in Florida Bay	Habitat preservation and management

Ivory-billed Woodpecker (*Campephilus principalis*)	Almost extinct	Unknown	Unknown	Understanding of habitat requirements, then management
Kirtland's Warbler (*Dendroica kirtlandii*)	Rare	Downward to stable	Migrant	Unknown
Mangrove Cuckoo (*Coccyzus minor*)	Very local and uncommon	Probably stable	Mangroves and hammocks of keys and southwest coast of Florida	Habitat preservation
Peregrine Falcon (*Falco peregrinus*)	Rare	Unknown	Statewide	Unknown
Red-cockaded woodpecker (*Dendrocopos borealis*)	Fairly common	Slowly downward	Statewide in old pine stands	Preservation of mature pine in large stands
Roseate Spoonbill (*Ajaia ajaja*)	Uncommon, restricted	Probably stable	Coastal areas of southern Florida	Habitat preservation and management
Sandhill Crane (*Grus canadensis*)	Common in suitable habitat of peninsula	Stable (eastern U. S. subspecies is increasing)	Peninsula in suitable habitat	Preservation and management of habitat; continued protection from shooting
Short-tailed Hawk (*Buteo brachyurus*)	Rare, probably endangered	Stable	Swamps of peninsula	Protection from shooting
Wood Stork (*Mycteria americana*)	Locally common	Stable	Swamps, marshes of peninsular Florida	Habitat preservation and protection of nesting colonies

MAMMALS

Black Bear (*Ursus americanus floridanus*)	Rare	Probably decreasing	The three national forests and parts of Collier County	Continued protection and assistance to beekeepers
Everglades Fox Squirrel (*Sciurus niger avicennia*)	Not abundant	Probably decreasing	Big Cypress Swamp and vicinity	Unknown
Everglades Mink (*Mustela vison evergladensis*)	Rare	Probably stable	Aquatic habitat, mainly marshes	Habitat preservation and protection from trapping
Florida Panther (*Felis concolor coryi*)	Rare	Decreasing	Mainly in the peninsula	Protect from further shooting; manage habitat
Indiana Bat (*Myotis sodalis*)	Unknown	Unknown, but probably decreasing	Northern cave regions	Cave preservation
Key Deer (*Odocoileus virginianus*)	About 500; probably nearing maximum for habitat	Increasing	Lower Keys, mainly Big Pine Key	Permanent habitat preservation
Key Largo Wood Rat (*Neotoma floridana smalli*)	Restricted	Downward	Parts of Key Largo	Preserve and manage habitat
Manatee (*Trichechus manatus latirostris*)	Fairly common	Probably decreasing	Coast and some rivers in peninsula	Unknown
Weasel (*Mustela frenata*)	Rare	Probably stable	Florida peninsula	Unknown

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[1] It is recognized that this list is not complete in regard to subspecies. Fuller treatment and inclusion of more subspecific forms will be considered as pertinent information becomes available.

Threatened list includes the red-cockaded woodpecker, above, bald eagle, right, and crocodile, below, shown with turtles.

(Continued from page 15)

WHEREAS, the Florida Game and Fresh Water Fish Commission desires to invite public participation in such a program to protect the threatened fish, wildlife and plants in Florida;

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Florida Game and Fresh Water Fish Commission, through its Director, shall publish annually, with copies made available for public distribution at no cost, a list of wild terrestrial animals, fishes and plants in Florida considered to be in danger of extinction.

2. The official list of Threatened Florida Fish, Wildlife and Plants shall include all species and subspecies of fishes, reptiles, amphibians, birds, mammals, other animals and plants and/or their habitats believed by the Commission to warrant such status. In listing threatened wildlife and plant forms, the Commission shall be guided by surveys conducted by qualified persons and by the best scientific data available from all sources on the status, population trends, and other matters pertaining to designation of species as threatened. Definitions of terms and the procedures for listing and de-listing shall generally follow those used by the Office of Endangered Species and International Activities of the United States Department of the Interior, with exceptions when appropriate.

3. The official list of Threatened Florida Fish, Wildlife and Plants shall be reviewed annually, at which time the Commission shall consider all data presented from government agencies, conservation organizations and private citizens pertaining to threatened fish, wildlife or plants. Petitions from organizations and private citizens shall be submitted to the Director, Florida Game and Fresh Water Fish Commission, no later than February 1 to insure a thorough review and consideration. Petitions should consist of a clear identification of the plant or animal form in question, and present reliable data indicating the advisability of listing, delisting, management or other vital needs of the wildlife or plant form in question. The revised list shall be announced annually between February 1 and April 1 and will be discussed in a public meeting during April."

Photos By Wallace Hughes

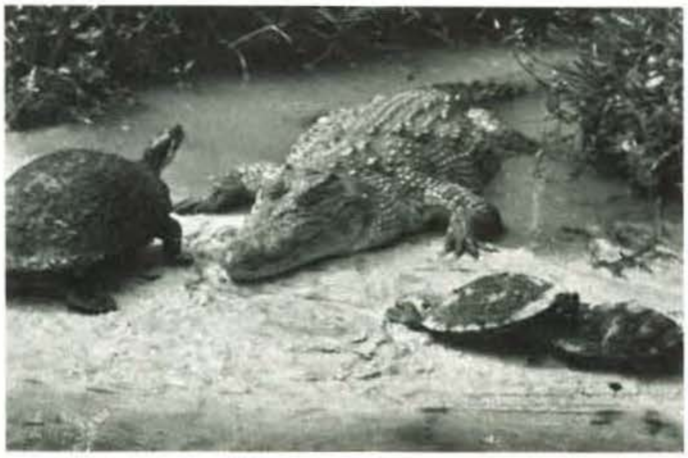


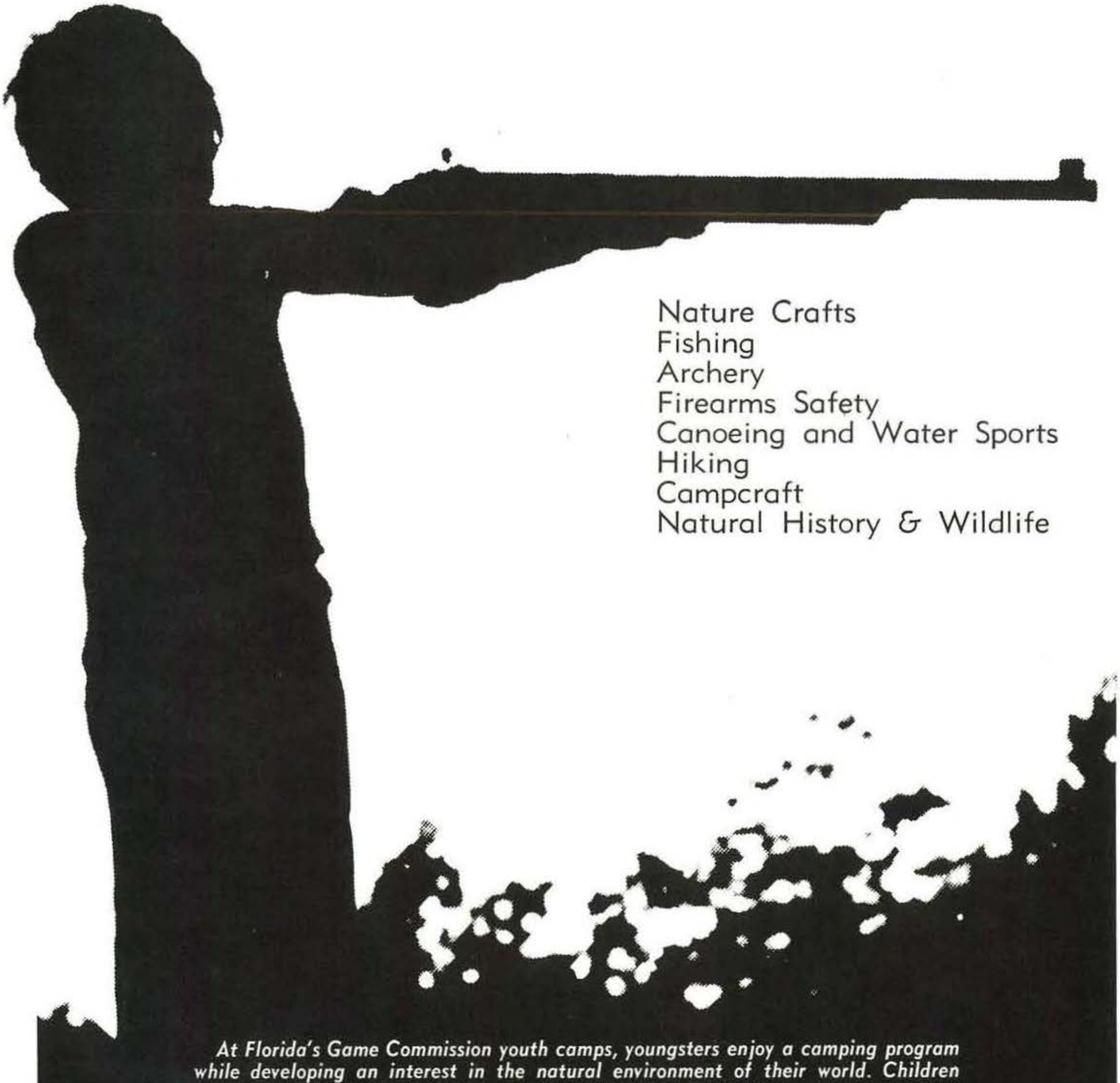
Photo By Larry Martin

Upon review of scientific data available, and upon the advice of the technical staff of the Game and Fresh Water Fish Commission, the Director considers populations of the 34 listed species of wildlife to be at this time threatened with extinction within the boundaries of the State of Florida and deserving of every prudent effort by state and federal agencies, public and private organizations, and private citizens to preserve them from extinction.

This replaces the list in Section 16E-3 of the Wildlife Code of the State of Florida, effective July 1, 1974. Comments for additions or deletions from the list are invited. ●

FLORIDA'S YOUTH CAMPS

"an adventure in exploring Florida's woods and waters"



Nature Crafts
Fishing
Archery
Firearms Safety
Canoeing and Water Sports
Hiking
Campcraft
Natural History & Wildlife

At Florida's Game Commission youth camps, youngsters enjoy a camping program while developing an interest in the natural environment of their world. Children from ages 8 through 14 participate in explorations which stress conservation and appreciation of recreation in our out-of-doors.

Information, costs, camp dates, and schedules may be had from the Conservation Coordinator, Florida Game and Fresh Water Fish Commission, Bryant Building, Tallahassee, Florida 32304. Camps commence June 16th and run through August 17th.

Photo By Morrie Naggiar

Photo By Wallace Hughes

an "island" of unspoiled wildwood in the central Florida highlands

Chinsegut

By MORRIE NAGGIAR

IT'S WORLDS AWAY from the land where its name originated. Chinsegut (Chin-SEE-gut)—the northern Alaskan Innuit word was used by the tribesmen of that chill and distant land to imply "the spirit of lost things." But not long after the turn of the century, when Colonel Raymond and Margaret Dreier Robins established a plantation in the Hernando County highlands just north of Brooksville, the word carried a somewhat different meaning for them.

"A place where things of true value that have been lost may be found again" was the Colonel's liberal interpretation of the Indian word. So Chinsegut Hill became the name of the 2,080 acres of fields, pasture, and forest land where the couple located their winter home.

The Robinses were from Chicago. They were both social economists and were active in political and social affairs of the time, especially in matters concerning the labor movement and women's participation in the mainstream of business and public life. Raymond held the rank of colonel in the U.S. Army, and served first as deputy commander and later as commander of the American Red Cross mission to Russia in 1917-18.

With their strongly developed social consciousness, it seems natural that they would take steps to assure their treasured acres would be used for the edification of the public long after they were gone.

In 1932, the Chinsegut Hill property was given to the U.S. Government as a wildlife refuge, forest reserve, and agricultural and horticultural experiment station. Miss Lisa von Browsky, of Brooksville, who was supervisor of the property for the governmental agency, said in a FLORIDA GAME AND FISH article in July 1940, "The Biological Survey accepted the property originally but not until very recently were steps taken to promote its end of the work. Other Bureaus of the Department of Agriculture started earlier with various experiments in cattle, grasses, and poultry."

For a number of years, the Game and Fresh Water Fish Commission conducted deer browse studies on Chinsegut. A portion of the property, a 400-acre segment supporting a stand of old-growth longleaf pine—perhaps the only remaining sizable acreage of such trees in Florida—was early set aside as a special wildlife area. This portion was

Photo By Morrie Naggiar

A quiet walk along the area's nature trail is a rewarding experience, and often highlighted by the sight of some of Chinsegut's varied wildlife, including white-tailed deer. Mays Prairie, above, adds variety to predominantly longleaf pine-turkey oak habitat. Birds love the marshy pond.

not used in the experiment station work on agricultural matters.

One of the Commission biologists, Steve Fickett, of Brooksville, was especially impressed with the potential of this block of land. He recognized that as an outdoor laboratory and classroom, a representative portion of central highlands habitat, with its unique plant and animal life, would be preserved.

With the backing and active participation of the Hernando Audubon Society, much local interest was generated for protecting the area by having it set aside specifically as a nature center. The Department of Agriculture was responsive to the proposal, and, with the cooperation of the Game and Fresh Water Fish Commission and the local Audubon group, development of the new nature reserve was under way.

In July 1973, in brief ceremonies in Tallahassee, title to the Chinsegut Nature Center was conveyed to the State of Florida by the U.S. Government. The area was one of several parcels of real property recently classified as surplus by the Federal government and given to the state under President Nixon's Legacy of Parks program. The balance of the original Robins Chinsegut Hill property remains in the Department of Agriculture's beef cattle research program.

The Chinsegut Nature Center encompasses 408 acres. It is located in Hernando County, some 3 miles north of Brooksville and approximately 50 miles north of Tampa on U.S. 41. The refuge is bounded on the north by State Road 476, on the west by State Road 581, and on the south by U.S. Highway 41. A refuge fence line forms the east boundary. The area is completely enclosed by a 7-foot wire fence.

Although not within the confines of the nature center, the vicinity is overlooked by Chinsegut Hill, the 275-foot height that dominates the local topography. It is one of the highest points in the state.

The land within the center is rolling, with a variation of 157 feet between Mays Prairie and the adjoining Chinsegut Hill. The region is part of the central highlands which extend down the middle of peninsular Florida southward almost to Glades County. In the Brooksville area, the highlands are underlain by Suwannee limestone of late Oligocene origin. There is some variability in color and hardness in this formation in the area, but where unaltered it usually has a yellowish or creamy color and generally consists of soft, granular limelike particles, some of which are of organic origin.

Elevations within the center range from 105 feet in the northwest corner to 65 feet at the edge of Mays Prairie in the central part of the area.

The soil of the Chinsegut Nature Center is composed of various fine sands overlying the limestone. In the soil scientist's scheme of things these soil types are classified as Zuber loamy, Arredondo

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loamy, and Kanapaha, Rutlege, and Immokalee fine sands.

Approximately 300 acres of Class III soil are found on the area, according to a Soil Conservation Service survey. Soil of this classification, composed of Arredondo fine sand, is well drained and has very rapid permeability. It requires intensive treatment if it is to be used as cropland. Due to the physical characteristics of Class III soil, little or no run-off occurs from this area other than ground return flow.

Soils on Mays Prairie are also Class III and are composed of Rutlege fine sand, which is very wet, black, acid, deep sandy soil, underlain by unconsolidated acid materials. This explains why the prairie may be dry during years of deficient rainfall.

Up until the late 1930s, the Chinsegut woodlands had been divided into sections and burned on a 3-year rotation. Although fire lanes were plowed annually to reduce the danger from wild fire, no burning was conducted from that time until the nature center was established. Parts are now control burned on 2- and 3-year cycles in study and demonstration plots.

Photo By Wallace Hughes

The plant life on Chinsegut is quite typical of the longleaf pine-turkey oak habitat, consisting of a considerable variety of trees, shrubs, vines, grasses, herbs, and aquatic plants. A total of 25 species of trees, 15 species of shrubs, 9 species of vines, 5 of grasses, 26 of herbs, and 12 of aquatic plants have thus far been identified on the area. More intensive work will undoubtedly reveal many more kinds of plants.

One of the outstanding trees found in the area is the old-growth longleaf pine. Trees in this stand are known to be over 100 years old.

Another unusual feature of this area is the rows of planted bald cypress which are located at the north end of Mays Prairie. Small hardwood hammocks favor the presence of plants which are not typical of the predominant longleaf pine-turkey oak type.

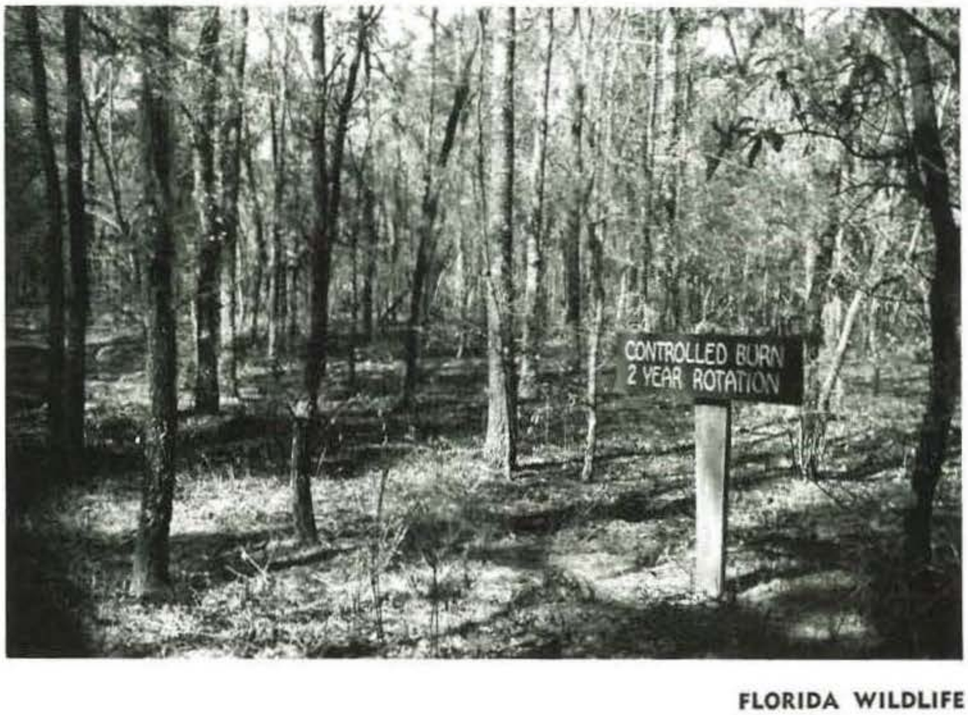
Of the mammals found on the area, 11 of the larger, more conspicuous forms include white-tailed deer, bobcat, gray fox, raccoon, skunk, opossum, cottontail rabbit, fox squirrel, gray squirrel, flying squirrel, and armadillo. There are a number of species of smaller rodents, bats, and other less conspicuous mammals yet to be listed.

A check list of birds made on the area during a 9-month period in 1966 totaled 74 species.

Access to the area is by arrangement with the Commission's regional office in Lakeland or through Steve Fickett, Commission game biologist, Brooksville.

A quiet ramble over the rolling wooded acres of the Chinsegut Nature Center is a real treat for the naturalist, whether an old hand in the field or merely an appreciative beginner. Here in the peace of the woodlands you can sense what Colonel Robins was getting at when he interpreted *chinsegut* as a place where lost things of true value may be found again. ●

Photo By Morrie Naggiar



What better way to get across the value of controlled burning than by a demonstration plot seen, at right, from one point on the nature trail. Myrtle warbler, above, is a bird common to Chinsegut. The bird population is bolstered in a spectacular manner by migrations in the spring and the fall.

weep not for the fawn

Photo By Art Runnels

TWO OF THE MOST APPEALING animals we know are the lamb and the fawn. The reasons for this are obvious. Both are delicately beautiful little creatures, gentle and vulnerable.

Yet the roles these two animals play in our world are quite different. At first glance it might seem that the lamb has the better deal. Usually, he will be born to a well-fed mother on a farm or sheep ranch within the collective security of a large flock or even the protective walls of a barn. The odds are great that his lifetime will be equally peaceful, for he is a domesticated animal, a commodity of commercial value from the moment he is born.

The fawn, on the other hand, is born wild, often to a mother suffering from the stress of eking out a livelihood on a range depleted by overstocking of domestic livestock, stricken by winter drought, enervated by a low-level diet of forage produced by poor or depleted soil. The fawn is in danger from the minute he is dropped . . . from the elements, from disease (there are no veterinarians in the woods), and from a variety of predators.

Before he reaches a year's growth, he will have faced numerous crises in the struggle to survive. Perhaps he will be handicapped by living on a range overprotected from fire, where the only available forage is too tough and leathery to be readily handled by the young animal. But even if he is fortunate enough to live in the midst of plenty, there are numerous dangers that threaten at every turn. This is Nature's way. Here the slightest weakness may be a fatal flaw.

There was a time, ages back, when the lamb's destiny would have been similar to the fawn's. But along the way, Nature's most intelligent and resourceful predator, man, discovered that it was much easier to guarantee a food supply by culling tame animals from a captive flock than by the riskier method of hunting wild ones whose speed and senses were superior to his. So certain animals were gradually converted to a form of benevolent captivity we call domestication.

By chance and other factors, several varieties of sheep were selected. The deer was not. Then, over the centuries, man's food-gathering activities, like others, became even more specialized. No longer do we all gather and butcher our lambs individually. Most of us now pay others to do this, for us. Obviously, it is more efficient this way.

The practice has now gone on for so long that, when we select a neatly wrapped package of lamb chops from the meat counter, we often forget where they came from or how they got there and that part of their price goes to pay our specialized, proxy predator.

The dinner table may also be in the fawn's future some day. For venison is quite delicious, and there are still those who find challenge and enjoyment in gathering some of their food by the older, riskier method called hunting. But the odds remain in favor of the deer . . . as much as 20-to-1 in his favor at times. More likely, he will eventually succumb to disease, to attack from your free-running pet dog, or a speeding auto on a superhighway we've recently cut through his range. In any event, few deer die of old age.

Frequently we hear from those who claim to weep for the fawn because his life may some day end at the hands of a hunter. It is curious that we never hear them weep for the lamb.

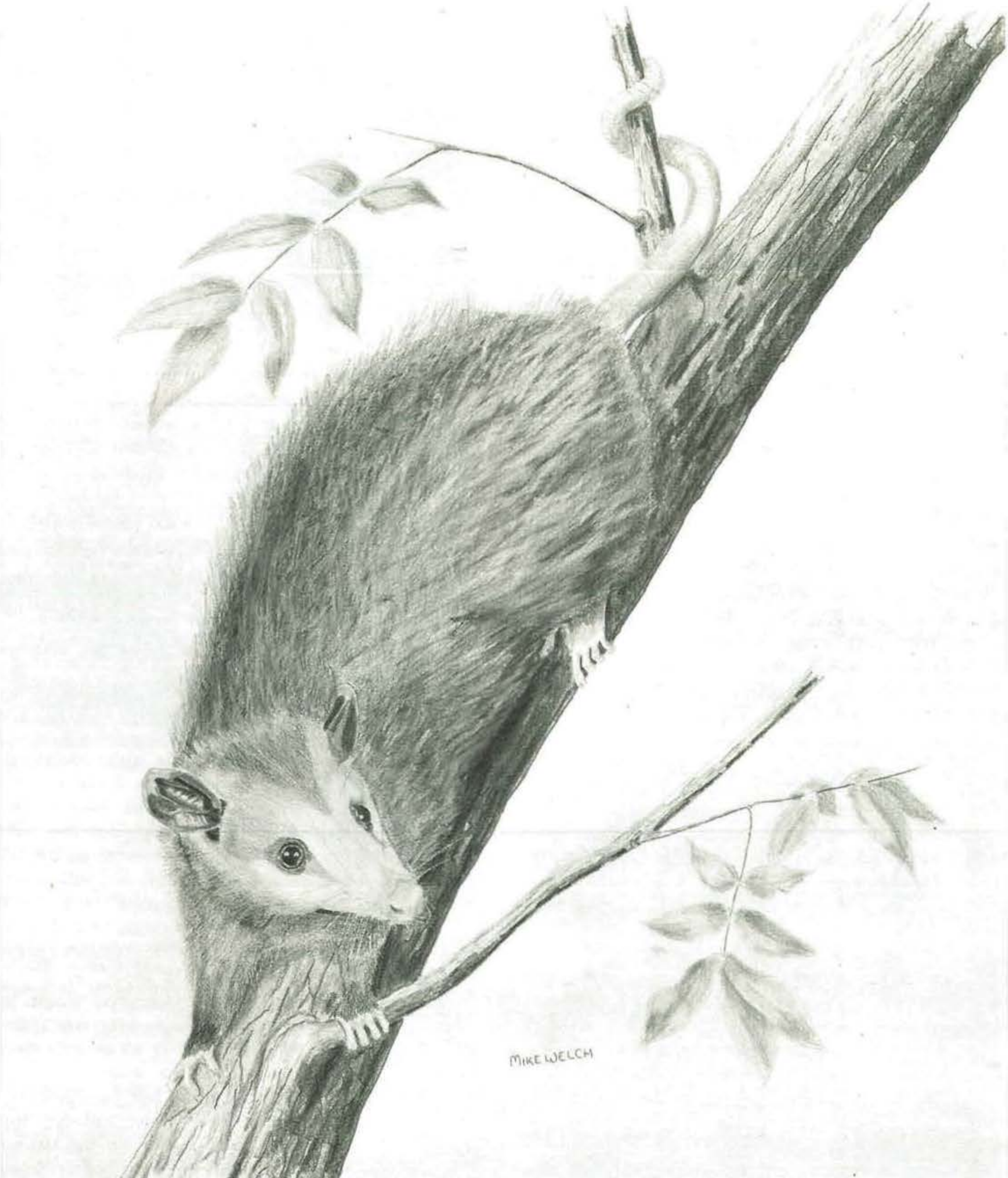
We say weep not for the quail but for the barnyard chicken; not for the antelope but for the feed lot steer; not for the fawn but for the lamb.

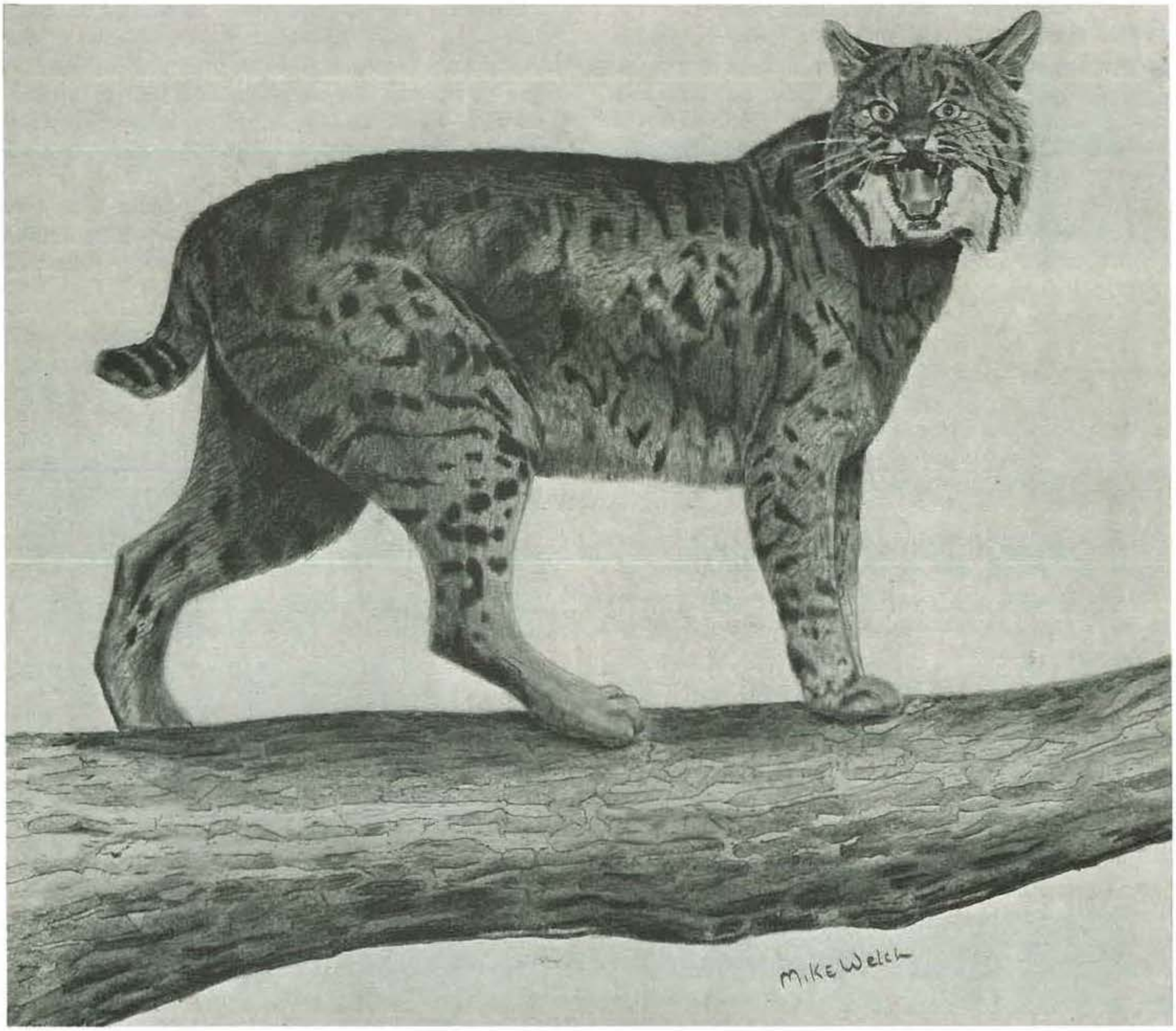
For if you had your choice of being born a fawn or a lamb, which would you choose?

—Adapted from OUTDOOR CALIFORNIA

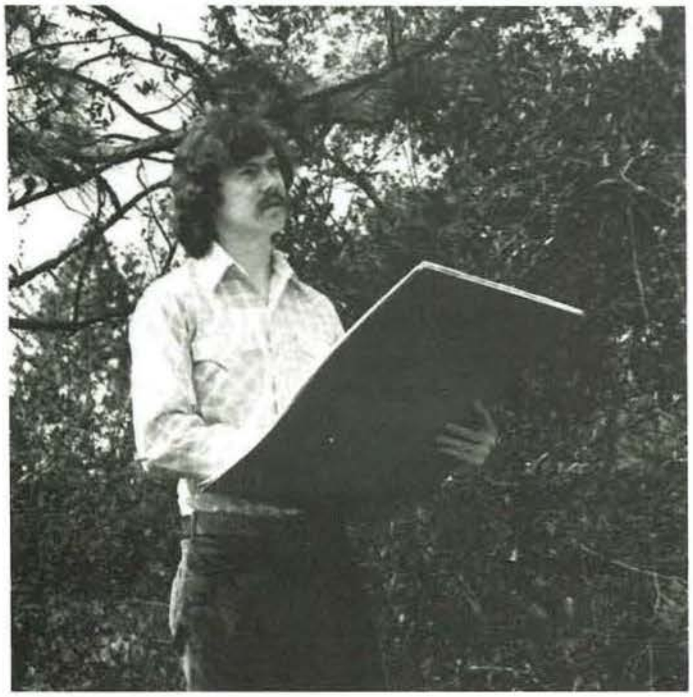
Capturing Wildlife

—with a pencil





OPOSSUM, left; BOBCAT, above.



MIKE WELCH

By CINDI WALLACE

ONE OF THE SIMPLEST, most natural forms of art is drawing with a pencil. It is a fast, spontaneous way of expressing one's self. Combine drawing talent with the inherent beauty of Florida's wild creatures, and you've found a new way to explore and relax in the great outdoors of Florida.

While other outdoorsmen do their hunting with shotgun, rifle, or camera, the pencil has proved to be quite a powerful weapon in the hand of 21-year-old Michael A. Welch, of Panama City. Sketch hunting is fun, and, as with the camera, the trophy ends up on paper for everyone to see.

Mike began doing wildlife portraits as a hobby

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(Continued from preceding page)

in the fall of 1972. He made his drawings in his spare time, from rough sketches and photographs. Though only a few are shown here, he has made many sensitive drawings of the inhabitants of Florida's outdoors. Each drawing produced increases Mike's knowledge of the flora and fauna of Florida. In order to achieve realism in his illustrations, he does a great deal of research, including hours of firsthand observation and reading natural history books. Each new subject is carefully studied.

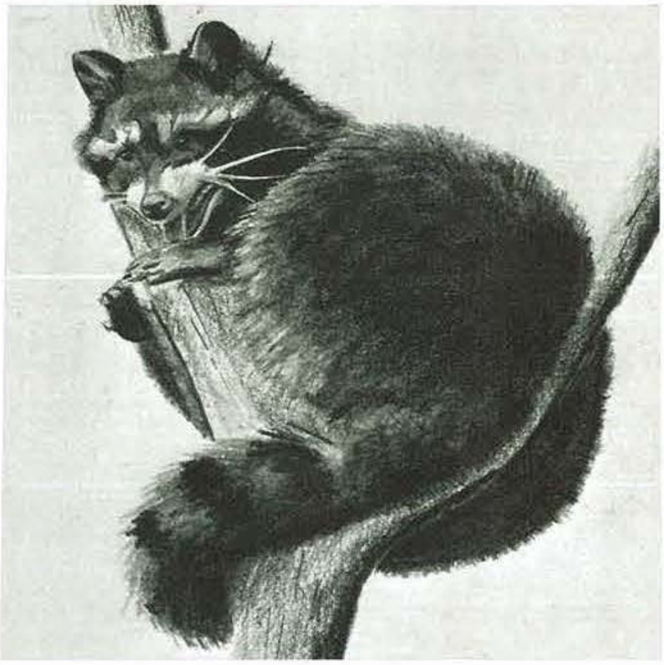
Mike won his first prize in art at age 15. His drawings won a first place award at the Bay County Fair in October 1973—his first exhibition of his wildlife drawings. He received overwhelming comments. Many viewers could not believe such fine work could have been produced by such a young artist.

Mike's background in art includes all the art classes he could take in school—art was one of the few subjects he enjoyed—and a 2-year course in advanced commercial art taught by James Chichester, Panama City art instructor. Upon graduation, he worked as a sculptor for a Panama City firm preparing exhibits for such well-known Florida attractions as Busch Gardens, Cypress Gardens, and Sea World.

In addition to his pencil renderings, Mike practices regularly with watercolors and oils. Photography is another of his mediums.

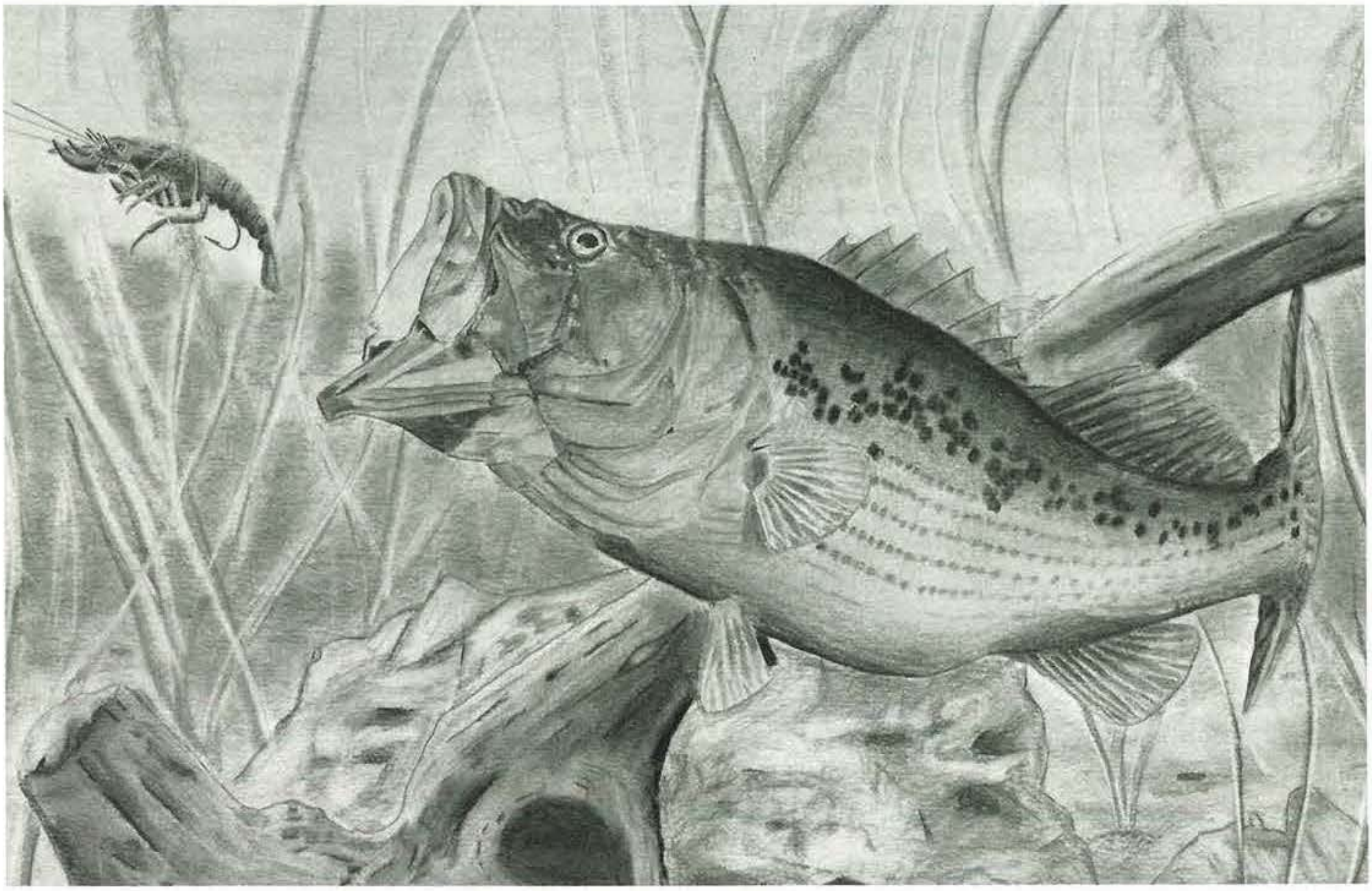
"Drawing has always come naturally to me," Mike says, "and I like being in the silence of our wild areas. The two just kind of fell together. I hope to become a professional wildlife illustrator, and with the unlimited amount of subject material available in Florida, it would be hard to lose interest."

We think you'll agree that, judging from the drawings on these pages, he won't have much of a problem changing over to the professional class. ●



LARGEMOUTH BASS, below; RACCOON, above.

Drawings By Mike Welch



Teamed for Accuracy

getting the most from your hunting rifles, whether big bores or small, is best assured when you stick to matched actions in all calibers

By EDMUND McLAURIN

In hunting, it is always a good idea to match firearm and load to specific need.

In our present age of specialization, it boils down to a rim fire .22 for squirrel hunting, a big bore center fire rifle for deer and tougher game, and a shotgun for upland game and waterfowl. The shotgun is no longer regarded as an all-purpose firearm. Its broad scope of application has not changed; simply, shooters have! It is now fashionable to own a separate firearm for each specific use.

Where more than one rifle is owned, it is best to have them of the same type of mechanical action. Sometimes it can mean the difference between being just a fair shot and an expert.

What are some good matched sets in big game and .22 caliber rifle models? Moreover, what are improved sighting aids that can be fitted to them?

Two excellent choices for teamed lever-actions are the Marlin Model 336 in .35 Remington caliber and a Model 39A in .22 rim fire caliber.

Placed alongside each other, the two rifles have marked family resemblance, especially in receiver and lever contours. Low metallic sight lines are common to both, and both mount a scope low and central overbore. Individual weight and balance are close enough to each other that the rifles have common feel in the hands of the shooter. Both are accurate and have fast mechanical operation for follow-up shots—if needed.

The Marlin Model 336's receiver comes factory-drilled and tapped for installation of either receiver peep sight or scope sight base. Excellent receiver peep sights for the Marlin 336 include the Williams FP-36, Lyman 66LA, and the old Redfield 70M and 80M models. A fold-down auxiliary, middle-positioned, open-style sight—used as rear peep alignment check sight or on its own in case of a field damaged rear peep sight—can be installed. The Lyman 16A is recommended.

The Redfield "Sourdough" in W-500 listing (if you can find one) is a fine choice for a front sight, or the shooter can choose one of the specialized Lyman or Williams bead front sights, in combination with rear peep. It is important that the front sight used be of correct overall height.

Once a scope sight base is fitted to a Marlin 336, any desired power hunting scope can be used in holding rings made to fit on the installed base. I like the low sight line, one-piece No. 63A base made for the Marlin 336 by both Weaver and Bushnell.

For a very strong, seldom removed scope installation, consider a one-piece Redfield Jr. No. 336-R base and matching rings.

Best bet in scope power is 2½X—and definitely no more powerful than 4X. The Marlin Model 336, as made in .30-30 Winchester and .35 Remington calibers, is basically a medium range use hunting rifle.

For a receiver peep on the Marlin 39, you can use a Williams FP-39 or 5D-39, or a Lyman 66MC, in combination with a .290M-size front sight.

For good, but inexpensive, mounting of a scope sight, use Weaver's teamed bases Nos. 16 and 29 for round-barrel Marlin 39's, and Nos. 28 and 31 for those fitted with octagon barrel.

You will enjoy using matched Marlins.

The same teaming potential exists in the Winchester line.

The Winchester Model 94 lever-action big game rifle is probably the most popular deer rifle ever made. More than 3 million Model 94's have been sold. The rifle, available in choice of .30-30 Winchester or .32 Winchester Special caliber, has primarily short- and medium-range application. As such, it is an American favorite.

To the delight of many thousands of current owners of a Winchester Model 94 lever-action big game rifle, Winchester is now marketing an almost identical rifle in .22 rim fire caliber. It is known as the 9422. Availability makes it possible to team two Winchesters that are almost twins, for alternate use for small and big game hunting. Major mechanical difference is that the Model 94 ejects its empties from top of receiver, while the Model 9422 ejects fired cases from side.

A Lyman 66A receiver peep sight, as well as the Williams FP-94, can be fitted to a Winchester Model 94, in combination with white or gold bead front sight or the better choice Redfield "Sourdough" front sight of .312M height and width designation.

A suitable scope sight and mount combination for the Model 94 Winchester is one of the forward-of-receiver, central overbore mounting Bushnell Phantom assemblies. Optionally, a side-of-receiver attaching scope mount, like the Williams SM94 or Weaver No. 3, and shooter's choice of make and

(Continued on next page)

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power of scope, can be used. With the side type of mount, the scope is positioned closer to the aiming eye, but must necessarily be mounted offset in relation to rifle bore to permit unrestricted ejection of fired cases from the Model 94's top-ejecting mechanism.

Relatively similar adaptations can be made to the older Model 64 lever-action.

The Williams FP-39 and 5D-39 receiver peep sights will fit the Winchester Model 9422 (besides the Marlin 39, for which the sights were originally tailored). Williams also makes the WGRS-54 Guide sight for use on the Model 9422. The sight slips on the 9422's grooved receiver for permanent installation or optional removal should the shooter wish to substitute a slip-on type scope mount as made for a grooved receiver.

The 1974 Lyman catalog does not list a receiver peep sight made expressly for the Winchester Model 9422, but I strongly believe that a Lyman 66A, as made for the Winchester Model 94, will fit the new Winchester lever-action .22. It is easy to make trial fitting; the receiver of the Model 9422 comes factory-drilled and tapped.

If the factory open sight combination is changed, a Redfield "Sourdough" of .406 height or a Williams .406M bead sight can be used with permanently installed Williams or Lyman peep sight. But when the Williams Guide model slip-on-grooved-receiver type peep sight is a shooter's choice, a Williams ⅜" height front sight ramp in combination with a .312N front sight will also be needed.

A Weaver T10 top-mounting scope base can be used on the Model 9422, as can a Williams TM-69-75, if you prefer a scope to metallic sights.

The Savage Model 99 lever-action big game rifle has been made and joyously used for decades. It is an excellent choice in a lever-action.

Metallic rear peep sights, like the Lyman 57SA (for Savage 99 models E, EG and R) and 57SB (for the F and DL versions), and the Williams FP-99 mount low and central overbore. Suitable replacement sights, for use with receiver peep, are the Redfield "Sourdough" M-375, and one of the Williams 47M, 468M or 281M (in size corresponding to manufactured version of the Savage Model 99).

There are numerous good scope sight mounts for the Savage Model 99. Among the best are the Williams TM-99, Redfield Jr.-99-R, Weaver and Bushnell Nos. 14 and 19 matched bases and rings, the Lyman BF-12 and BF-36 matched set, the Leupold No. 308 and 206 matched set, the Buehler 99, and the Pachmayr S-99T units.

For hunting, a 4X scope sight is recommended for open country shooting, and 2½X for short-range shooting in thick brush or timber.

As team mate for a Savage Model 99, consider using either a Winchester Model 9422 or Marlin 39A, since Savage does not produce a little brother version of the Model 99. No close matching in looks can be had, but practice shooting with one of the recommended .22 rim fire rifle models will augment skill with the Model 99's lever-action.

Good sights for the two rim fire models have already been described.

If you already own a slide-action type big game rifle, you have a wide range of selection for a companion rifle in .22 caliber. There are many good ones among competitive national brands. However, if you happen to own a slide-action of .22 caliber and wish to add a big game rifle of similar mechanical action, your choice is limited. At present, only two models of slide-action big game rifles are offered—the Remington Model 760 and the Savage Model 170.

These models are quite adequate for market need. They are well made, fast operationally, and functionally reliable. For aimed shots by a shooter familiar with his rifle, they can be fired as rapidly as an autoloader.

Factory open sights can be easily replaced with better installations. The Williams FP-740 or 5D-760 receiver attaching peep sight will fit both the Remington Model 760 and the Savage Model 170, as will Williams' bead front sights.

Good scope mounts for both models include the Weaver No. 62 base and matching rings, the Redfield Jr. JR-760 mount, and the Williams TM-760.

Ideal companion rim fire rifle to a Model 760 slide-action big game rifle is a Remington Model 572 "Fieldmaster" .22. The model also teams well with the Savage Model 170.

Metallic sight combinations available for the Remington Model 572 include the Lyman 66R22 receiver peep and ivory bead front sight, and the Williams 5D-572 used with Williams ⅜" height ramp and bead front sight 290N.

The Remington Model 572's grooved receiver permits use of a slip-on type scope mount of any leading brand.

Teaming a big game autoloading rifle with an autoloading .22 offers no problem.

For example, the Remington Model 742 big game rifle can be teamed with a Remington Model 552 autoloading .22. When kept clean and used with fresh ammunition, these autoloaders seldom give trouble.

Sight combinations made to fit the Remington Models 760 and 572 generally will also fit Models 742 and 552. Where they don't, special listings can be had.

For shooting of big game at close range, as often occurs in Florida's thick brush, some shooters swear by the Ruger .44 Magnum "Deerslayer" carbine.

Installation of a good receiver peep sight, as found among the Lyman 66RU and the Williams FP-RU and 5D-RU models, is recommended.

Where a scope is preferred, either a Buehler or Williams mount will be good choice. Both makes of scope sight mounts are designed to permit mounting of a scope so that the ocular lens is desirably about 1½ inches back of the rifle's trigger guard. A 2½X scope gives all the magnification needed for efficient use of the essentially short-range .44 Magnum caliber carbine.

Ideal teammate for the Ruger "Deerstalker" autoloading big game rifle is a Ruger 10/22 Model .22 caliber autoloader that offers complementary low cost practice shooting. There is the regular model, and a dressed up "Sporter" version with hand-checkered pistol grip and fore-end. I prefer the latter.

Optional sight combinations for the Ruger 10/22 include the Lyman 66RU receiver peep sight and 31SA or 37SA front sight; and the Williams 5D-RU or WGRS-RU2 rear peep and matching height front sight.

Scopes are easy to mount on the Ruger 10/22, using teamed Lyman BF-16 and BR-31 front and rear bases, a Williams TM-22RU top mount, or a Weaver T9 mount. Don't use a scope of more than 4X on the 10/22 Model, and especially so if you use a 2½X on the .44 Magnum caliber "Deerstalker."

Although the cartridge used is not truly suitable for large game hunting, many deer hunters use the lightweight, fast-handling .30 M1 Government model Carbine—simply because they carried one in the days of World War II, and liked its feel and handling. Many .30 M1 Carbines are seen in the hands of Florida deer hunters.

For a shooter owning a .30 M1 autoloading Carbine, an ideal companion piece is the Marlin Model 99 M1 .22 caliber Carbine that looks a lot like the Government-issue .30 caliber.

Mostly, these carbines are used with metallic sights. The Williams FP-30MI and Lyman 57C receiver peep sights will fit the .30 M1 in combination with correct height front sight.

For the Marlin Model 99 .22 autoloader, either the Lyman 66MD or Williams 5D-56 receiver peep sight, and matching front sight, can be used.

Good bolt-action combinations are too numerous among different national brands to attempt to cover descriptively.

For my money, a perfect team is a Remington Model 700 big game rifle of chosen center fire caliber and a Remington Model 541-S .22 caliber rim fire bolt-action. Both can easily be fitted with excellent metallic sight combinations, or a good scope.

For a metallic sight combination for the Remington Model 700, use one of the fine Lyman 48 micrometer-adjustment receiver peep sights with Lyman ivory bead or Redfield "Sourdough" front sight, or a Williams FP-700 receiver peep sight and front sight of Williams, Lyman, or Redfield manufacture. (A Redfield "Sourdough" front sight, whatever the needed version in height and width, may be hard to find in sporting goods stores now that Redfield has reduced its line of metallics, but gunsmiths may still have "Sourdough" sights. Where they do not, models can be ordered from Original Sight Exchange, Paoli, Pennsylvania 19301.)

On the Remington Model 541-S, .22, the Williams WGRS-54 Guide model slip-on-receiver peep sight gives neat, compact, efficient installation on the 541-S's factory-grooved receiver. The side-mounting Williams 5D-10 model can also be used. Lyman does not make a receiver sight for the Remington Model 541-S.

Excellent scope mount choices for both the Remington Model 700 and Model 541-S can be made among the Weaver, Bushnell, Lyman, Leupold, Redfield, Williams, and Buehler brands. Both slip-on-grooved-receiver type and conventional style mounts can be had from these makers.

Matching gun actions, for similarity of feel and mechanical operation, is something the serious shooter should consider.

IN THE DECEMBER 1973 Hunting column, mention was made of use of a 50-50 mixture of raw linseed oil and turpentine for oil finishing of gunstocks for durable, easily maintained beauty.

Directions called for the mixture to be applied boiling hot to raw wood, with the heat and turpentine the agents for achieving deep penetration of the raw linseed oil. (The turpentine would eventually evaporate.)

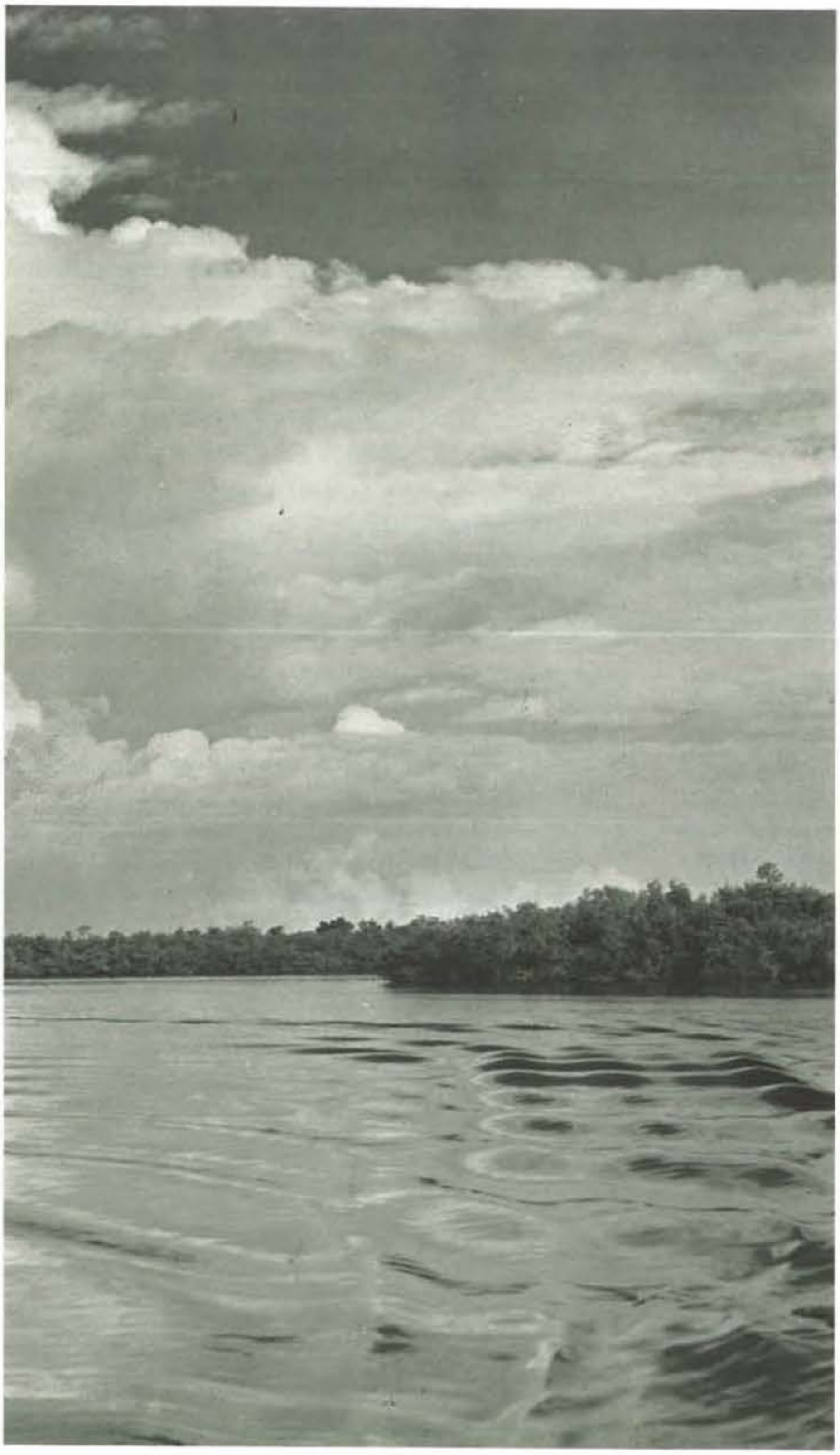
Instructions were literally the same as contained in HOME GUNSMITHING DIGEST by Tommy L. Bish, and Volume I of THE MODERN GUNSMITH by James V. Howe, two independent, renowned professional gunsmiths. In neither text is any precautionary note given about heating the mixture.

Similarly, I have mixed and used the recommended 50% raw linseed oil-50% turpentine mixture, boiling hot, for years without any trouble.

One young reader, however, reportedly experienced ignition of the mixture—probably due to attempting to heat less than a cupful in a small container on the high heat setting of a kitchen stove. Quite likely, the fast, high heat quickly vaporized the small volume of turpentine and subsequently ignited the vapors.

There is always risk in bringing any volatile liquid or mixture to a fast boil, particularly in small, quickly overheated volume. Correctly, heating of mixtures containing turpentine and other volatile liquids should be in reasonable volume, in a sizable container, and over slow, controlled heat.

Such precautionary preparation and handling are advised. ●



CLEAN AIR, LAND, AND WATER

A REPORT FROM THE NATIONAL WILDLIFE FEDERATION

The E Q* Index

*ENVIRONMENTAL QUALITY

OVER THE PAST 5 years, U.S. public interest in the environment seemed to soar. Catchwords such as "ecology" and "conservation" took on new meanings, and became akin to those other American sacred cows, apple pie and motherhood. During that period, Congress committed far more money than ever before to clean up our air and water, a host of antipollution laws were passed, and an entirely new federal agency was even created to deal with them: the Environmental Protection Agency. Communities and cities across the country have also taken steps to deal with their own pollution problems.

In fact, has there really been an upswing in environmental interest? If so, what has been its effect? What difference, if any, has it made in the quality of American life? Has "motherhood gone out of the environment" as some authorities have reported?

The Fifth Environmental Quality Index thoroughly examined the current status of the American environment in the February-March issue of

NATIONAL WIILDLIFE Magazine. The EQ Index, published annually since 1969 by the National Wildlife Federation, statistically and graphically assesses where we have been, what we are doing now, and where we are headed in our environmental battle.

In putting our current environmental status into perspective, the Index provides a concise analysis of a variety of environmental data from various government sources, including the new EPA. Overall, the picture shown by the Index is not bright, with the total U.S. environment standing at 53 on a 100-point scale—one point lower than in 1973.

"In too many large cities the air is still not fit to breathe," states the introduction to the 1974 Index, "and in too many parts of the country even the drinking water is contaminated. But perhaps most disconcerting of all, environmentalism itself has become an increasingly beleaguered movement."

As indicative of the total U.S. environment, seven key indicators are featured in the EQ Index: air, water, minerals, wildlife, living space, timber, and soil. "All EQ indicators except air, in fact, are down (from previous years)," according to the report. While the EQ measurements are not exact, the Index emphasizes, they do represent the best collective judgments of a National Wildlife Federation research team.

Besides providing empirical documentation, the EQ Index gives case examples of each of the indicators. For instance, in the summary analysis of the status of U.S. wildlife, the Index reports that, "Each year in the U.S., over one million acres of habitat is either buried under buildings and pavements or drowned by reservoirs. But in addition to robbing wildlife of vital living space, our industrialized society kills outright as well. For example, more than 150,000 birds die annually in oil field sumps alone. One recent visit to a single oil sump revealed 187 victims: 90 songbirds, 87 ducks, one owl, one egret, five geese, and three herons. Largely because of habitat loss, the Interior Department's endangered species list has gone up from 101 to 109 this last year."

A lack of public concern is reportedly not the principal problem. The index quotes the latest annual report of the Council on Environmental Quality (CEQ) as stating, "The nation has voted overwhelmingly for a cleaner environment."

Instead, the principal diagnosis of the problem is a lack of funding. Only about 1% of the new Administration-proposed $304.4 billion budget is designated for environment and natural resources programs. According to the CEQ, a total of $274 billion should be spent within the next decade by industry, citizens, and government in order to meet federal pollution abatement standards by 1981. That includes not only air and water clean-up, but solid waste, noise, radiation, and land reclamation as well.

OIL AND WATER DON'T MIX

While the $274 billion would only represent 2½% of the nation's gross national product, any lower level of spending, warns the CEQ, will "result in even greater penalties in terms of health, recreation, or aesthetics."

"At the present low level of spending," according to the Index, "it will be impossible to reach the CEQ goals."

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"The fact is," the NWF publication noted, "that by cleaning up air and water pollution, in the long run the nation will actually save money." As an example, the Index observes that by 1977, almost $2 billion in air pollution damage will be saved if the proper controls are put to use now.

If 1977 seems a long way off, the annual report points out, "Consider the damage air pollution alone is causing right now: $16 billion per year, or about $80 for each American, in terms of damage to vegetation, materials, property, and health."

"In short, the clean-up campaign has moved at little more than a snail's pace since it began, back in 1955, with passage of the original air pollution control legislation."

The fifth EQ Index also documents changes in the degree of pollution from the five major air pollutants and comparative clean-up track records of cities in different regions of the country over the past 5 years, including an illustration of how the city of Chicago monitors its air and water pollution.

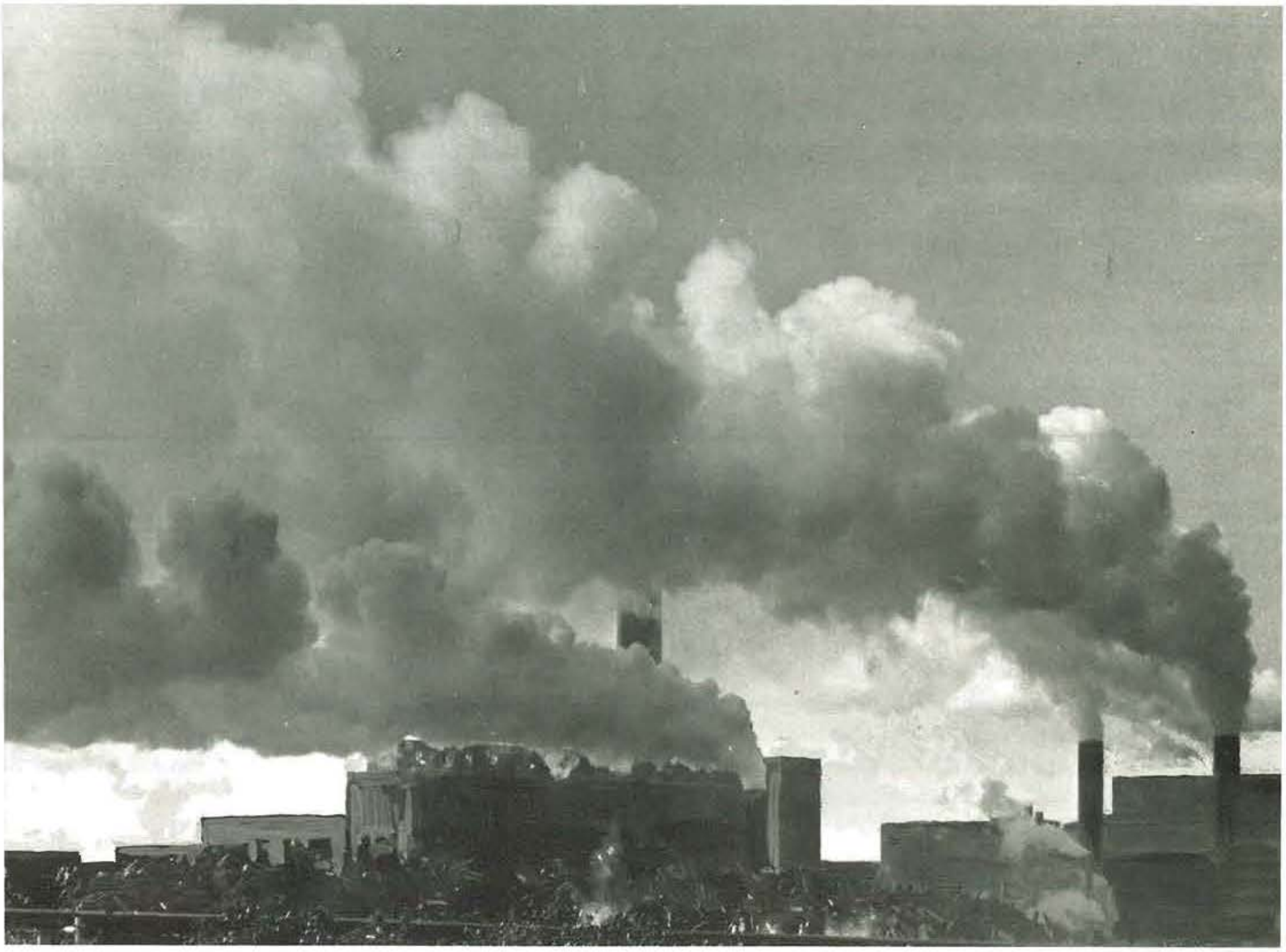
In an Index follow-up, the veteran environmental specialist for NEWSWEEK Magazine, James Bishop, examines the bizarre and baffling "Politics of Pollution." "Despite some significant progress on the clean-up front," Bishop writes, "the nation's political and corporate leaders—though not necessarily the people themselves—are showing signs of pulling back from the root challenge presented 5 years ago. Altering the nation's values of unlimited economic growth, and acknowledging that the price of America's progress has been prohibitively high."

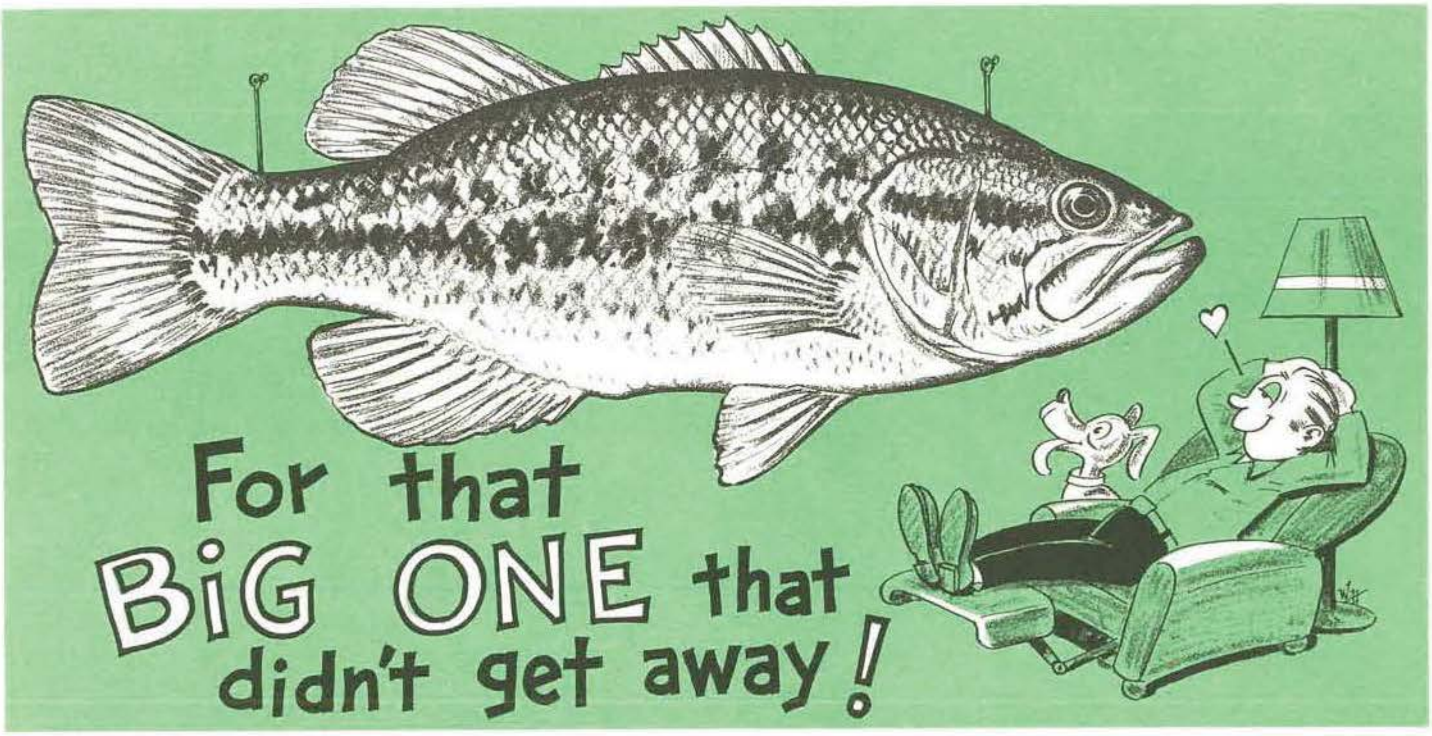
Even though environmental considerations are now a basic part of government decision-making, Bishop explains, an increasing tendency to cast environmentalists into the scapegoat role shows an "obliviousness to the fact that depletion of natural resources, sloppy mining practices, inefficient distribution, . . . were some of the triggers of environmental awareness in the first place."

Whether environmentalists survive won't be known until some of the upcoming major battles over our quality of life are fought, according to Bishop. "Each of these contains the seeds of unprecedented ecological havoc if they are carried out under the boom town ethics and laws of yesteryear."

"But perhaps even more fundamentally, the answer won't be in until much more is known about the American public's commitment to environmental reform—until it is truly tested." ●

O BEAUTIFUL FOR SPACIOUS SKIES





ELIGIBILITY REQUIREMENTS SPECIES	
LARGEMOUTH BASS	........8 pounds or larger
CHAIN PICKEREL	........4 pounds or larger
BLUEGILL (BREAM)	........1½ pounds or larger
SHELLCRACKER	........2 pounds or larger
BLACK CRAPPIE	........2 pounds or larger
RED BREAST	........1 pound or larger

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The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.

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is available without charge, to any and all subscribers to Florida Wildlife Magazine, and their immediate families, who catch any of the fresh-water game fish of the prescribed species and size requirements. Citation, showing recorded date of the catch, will be mailed to the applicant upon receipt of the following application form that has been properly filled out and signed.

Only fishing citation applications received within 90 days from date of catch will be honored.

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The Editor, FLORIDA WILDLIFE Date____________
Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

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City____________ State________ Zip No.________

Species____________ Weight________ Length________

Type of Tackle____________

Bait or Lure Used____________

Where Caught____________ in________ County

Date Caught________ Catch Witnessed By____________

Registered, Weighed By____________ At________

Signature of Applicant____________

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Barking Tree Frog

Photo By Wallace Hughes

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